

# InterAmerica

RESEARCH ASSOCIATES

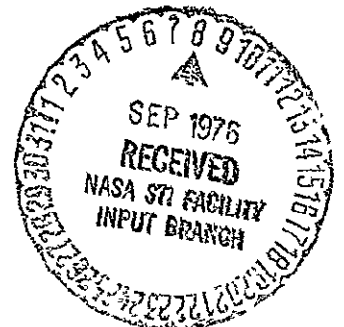
FINAL REPORT

Volume II

(NASA-CR-148715) TECHNOLOGY UTILIZATION N76-31094  
CONFERENCE SERIES, VOLUME 2 Final Report  
(InterAmerica Research Associates) 294 p HC  
\$9.25 CSCL 05A G3/85 15175  
Unclas

Technology Utilization Conference Series

Contract #NASW 2761



FINAL REPORT

VOL. II

Contract #NASW 2761

Technology Utilization Conference Series

Submitted To:

NASA Scientific and Technical Information Facility  
College Park, Maryland

NASA Headquarters - New Technology Representative  
Washington, D.C.

NASA Headquarters - Office of Equal Opportunity Programs  
Washington, D.C.

Submitted By:

InterAmerica Research Associates  
2001 Wisconsin Avenue, N.W., Suite 275  
Washington, D.C. 20007

Contact Person:

Juan J. Gutierrez, President  
(202) 333-4900

## TABLE OF CONTENTS

Houston Technology Utilization Conference	APPENDIX I
Los Angeles Technology Utilization Conference	APPENDIX II
Boston Technology Utilization Conference	APPENDIX III
San Francisco Technology Utilization Conference	APPENDIX IV
Chicago Technology Utilization Conference	APPENDIX V
Atlanta Technology Utilization Conference	APPENDIX VI
Formal Invitations	APPENDIX VII
Materials Distributed at Conferences	APPENDIX VIII
Agendas	APPENDIX IX
Mailing Lists and Organizations Screened for Recruitment	APPENDIX X

## APPENDIX I

Houston Technology Utilization Conference

Held February 27, 1975

NASA Johnson Space Center



## TABLE OF CONTENTS

I.	PREFACE .....	1
II.	PREPARATION .....	2
	A. Agenda .....	2
	B. Site Selection .....	3
	C. Recruiting of Minority Businessmen .....	3
	D. Formal Invitation .....	5
	E. Final Preparation and Follow-Up .....	5
III.	CONFERENCE .....	7
	A. Minority Business Participation .....	7
	B. Proceedings - Morning Session .....	8
	1. Introduction .....	8
	2. Welcome to Johnson Space Center .....	9
	3. Welcome to Conference .....	10
	4. Commercial Applications of Space Technology .....	11
	5. Technology Transfer and the Minority Businessman ...	12
	6. The Industrial Applications Center System .....	14
	7. Workshops .....	20
	a. Machine Tool and Metal Fabrication .....	20
	b. Electrical/Chemical .....	26
	D. Luncheon Presentation .....	32
	E. Proceedings - Afternoon Session .....	37
	1. NASA Patents and Licensing .....	37
	2. You Can't Eat Moon Rock .....	38
	3. Space Ventures, Inc. MESBIC .....	39
	4. How to do Business with Rockwell .....	41
	5. New Technology from the Space Shuttle Program .....	42
	6. Services Available through OMBE .....	42
	7. Conference Conclusion .....	42
IV.	EVALUATION .....	44
V.	CONTRACTOR'S OBSERVATIONS AND COMMENTS .....	49

I.      PREFACE

The NASA Technology Utilization Conference held at the Johnson Space Center on Thursday, February 27, 1975 marked the beginning of a series of six conferences designed to bring minority businessmen into contact with available information and services offered by NASA.

The preparation of the Houston Conference was approached systematically, harnessing together the resources made available by the National Aeronautics and Space Administration, the Office of Minority Business Enterprise and InterAmerica. While some coordination problems occurred, the issues involved were settled with sufficient dispatch to facilitate a successful program.

The program agenda, developed by the Task Force Committee, proceeded smoothly at the conference. The morning sessions, workshops and the luncheon program were well received. As the presentations reached into the late afternoon, the audience did show some signs of restlessness but the total program was highly rated by the audience evaluations.

The first conference provided guidelines which will be implemented in subsequent conferences. Observations made during the preparation, performance, and evaluative stages of the conference in tandem with comments and suggestions of participants have been extremely valuable in indicating a course for future conferences.

## II. PREPARATION

The process of preparing for the Houston Technology Utilization Conference was comprised of the following primary functions: (1) development of a detailed agenda, contact and commitment of agenda participants; (2) site selection and identification of key support people; (3) identification and recruitment of minority business representatives; (4) arrangement of logistics; (5) formal invitation of minority business representatives; (6) follow up and site preparation.

A detailed agenda for the conference was prepared by InterAmerica, although a great deal of negotiation was involved to balance the sometimes conflicting program requirements presented by the NASA and OMBE representatives. It was determined, by the NASA-OMBE-InterAmerica Task Force Committee, that speakers would include representatives from participating departments of both organizations and Rockwell International; and that the workshops would be conducted by the staff from the Industrial Application Center at the University of New Mexico. The agenda was structured to provide a workshop atmosphere with continuous reinforcement to the concept of minority business involvement with the Technology Utilization Program. As an extra element, with plans for expansion in future conferences, InterAmerica arranged for representatives from EXXON, L.T.V., Shell Oil Company, and Texas Instruments to attend the conference to become acquainted with the program and ultimately become sponsors of the minority businessmen. Through the agenda, minority businessmen were set up to encounter technological information, provided the opportunity to discuss their own particular problems and

ideas with technology utilization technicians, and placed in an environment in which they could discuss practical applications of technology utilization with private sector firms.

The initial site for the Houston conference, the Hyatt-Regency Motor Hotel, was presented to InterAmerica by the NASA contract representative. After a joint site survey by the InterAmerica project director and the NASA contract representative, the site was found to be more than adequate to support the program logistically, with only the lodging cost being considered somewhat expensive. However, a full week after the site visit, the location was changed to the Johnson Space Center by an internal decision with NASA.

After a good deal of delay, the InterAmerica project director, with the support of the Johnson Space Center Equal Employment Opportunities Office, was able to secure and commit the facilities and support necessary to carry out the program. The Gilruth Recreation Center at Johnson Space Center was reserved by telephone and all logistical support was confirmed on a very tight time schedule, much to the credit of the Equal Employment Opportunities Office at Johnson Space Center.

While on location in Texas, the InterAmerica project director met with the Regional Director of the Office of Minority Business Enterprise and various community organizations to solicit assistance in identifying minority businessmen involved principally in the manufacturing area, who could potentially benefit from the program. During the identification

process contacts were made with approximately 75 trade or business associations, seven universities and numerous agencies and companies. Listings and directories were furnished for screening by InterAmerica by the following organizations and companies:

National Aeronautics and Space Administration - Distribution  
Control and Analysis File

National Directory of Minority Manufacturers - Office of  
Minority Business Enterprises

Firms in the 8(a) Business Development Program - U.S. Small  
Business Administration Reports Management Division

Directory of Minority Owned Businesses in Texas - Texas

Industrial Commission - Office of Minority Business Enterprise  
Minority Vendors Directory for the Greater Houston Area - Houston  
Regional Minority Purchasing Council

National Association of Black Manufacturers Membership Directory  
Austin Minority Business Directory - Austin Minority Economic  
Development Corporation

Black Business Directory - San Antonio - San Antonio Business  
Resource Center

Minority Business Enterprises Directory - McDonnell Douglas Corporation  
San Antonio Area Minority Contractors Listing  
Air Conditioning Council of Greater Houston Membership List  
SIC Code Listings

An invitation list comprising more than 100 companies was selected using the criteria developed by the Task Force Committee, i.e., minority,

manufacturing potential technology user. Due to the small size of the minority businessman population in or about metropolitan Houston, a target attendance of 25 representatives was set for the conference.

Logistical arrangements for the conference site, transportation and lodging were handled entirely by telephone. The cooperation provided by the Johnson Space Center personnel was excellent. Johnson Space Center provided the Gilruth Recreation Center, transportation from the Ramada Inn (used as the staging center), a communications center, clerical support, equipment support, and luncheon facilities. Arrangements were made to provide registration assistance and orientation to the participants as they arrived at the Inn.

Formal written invitation packages (see addendum I) were mailed out one month before the conference date. The invitation included all the information necessary to attend the conference along with a stamped self-addressed confirmation card. The response to the direct mail invitation process was more successful. Each invitee was contacted via a personal telephone call, affording the invitees the opportunity to receive answers to their specific questions, resulting in a clearer understanding of the program. The telephone process resulted in 32 company confirmations, committing 40 representatives.

Once the site facility, agenda participants and the audience were committed, InterAmerica proceeded to follow up all arrangements by maintaining continuous contact with all elements of the program. NASA, OMBE and the private sector agenda participants were called periodically to insure that all contingencies were considered before the week of the conference. On February 25, 1975, an InterAmerica conference control

center was set up at the Johnson Space Center Equal Employment Opportunities Office from which all final arrangements were made. The Gilruth Center was prepared, displays set up; materials which had been selected from the literature search of the OMBE and NASA sources were coordinated. Equipment was provided, luncheon arrangements were finalized, and speakers and participants given final directions.

### III. CONFERENCE

#### Attendance and Profile of Attendees

A total of 24 minority business representatives registered for the conference. Of this number, 15 completed a questionnaire distributed at the conference in an attempt to determine the profile of the represented companies.

The sales volume of 48% of the represented firms was less than 50 thousand dollars. The average number of employees in the firms was 11; however, this figure represents a wide range, from 0 in one case to 40 in another. These statistics portray the general profile of the participants in this conference as comprised of small businessmen whose firms have low annual sales volume. However, it is not expected that this profile will be indicative of the representative populations at future conferences. The number of conferees at this convention was relatively small in comparison to the expected numbers for the future; therefore, the sampling is somewhat weighted to reflect a single segment of the population.



## PROCEEDINGS - Morning Session

### Introduction - Mr. Harrison Allen, Jr.

Mr. Harrison Allen, Jr., the Chairman for the seminar, introduced himself as a Technology Utilization Engineer at the NASA Lewis Research Center in Cleveland, Ohio.

He commenced the conference by welcoming the participants on behalf of OMBE and NASA, the two government agencies co-hosting the seminar. He expressed his appreciation that the minority businessmen had taken time from their busy schedules to attend the conference, and assured them that their time would be well spent.

Mr. Allen then addressed the participants on the objectives of the seminar, combining his talk with a slide presentation. The objectives were:

1. to discover how your company can benefit from or commercially utilize NASA technology;
2. to become aware of the business assistance and support organizations offered by OMBE which can aid you in utilizing NASA Technology;
3. to gain information on business and sub-contracting from one of NASA's prime contractors, Rockwell International Corporation;
4. to disseminate information on NASA grants for minority colleges to those in the audience representing these institutions.

Other purposes of the seminar which Mr. Allen enumerated included exposing the minority businessmen to specific information on 19 NASA patenting opportunities, a number of NASA innovations described in TECH

briefs, information on 13 unpublicized NASA innovations, 3 NASA products which have had preliminary market surveys and appear to be ready for commercial exploitation by any of the participants, and minority college grant programs at NASA field centers.

Mr. Harrison Allen proceeded to the introductory remarks by NASA and OMBE. He indicated that although Chris Craft was listed on the program as the NASA speaker, he was otherwise engaged, and has sent Mr. Joseph Atkinson, the EEO officer for the Johnson Space Center, to deliver welcoming remarks.

Welcome to Johnson Space Center - Mr. Joseph Atkinson

Mr. Atkinson welcomed the participants on behalf of the director of the Johnson Space Center, and said that they were glad to be hosting this first conference in the series of six. He informed the audience that the Johnson Space Center has been extremely interested and active in the promotion of minority business and had placed millions of dollars into this area of endeavor. Currently, they are working on a goal of 1.6 million dollars in procurement for the end of this year.

Mr. Atkinson introduced the members of the Johnson Space Center Technology Utilization organization present in the audience who would be available throughout the day to the participants:

Joe Loftus, Technology Planning Office Director;

Jack Wheel, Technology Utilization Office Director;

Mr. Shymlack;

Mr. Barr. ;

He also indicated that representatives of Rockwell International were present and that Rockwell was the prime contractor for the space shuttle, a major program at the Johnson Space Center. He stressed that Rockwell was committed to the promotion of minority business.

Mr. Atkinson again welcomed the participants and wished them a productive session.

Mr. Harrison Allen introduced Mr. Sam Cornelius, Deputy Director of OMBE.

Welcome to Conference - Mr. Sam Cornelius

Mr. Cornelius said that it was a pleasure to be at the Johnson Space Center cohosting the program. He indicated, through a joke, that he expected this seminar to be a profitable use of the businessmen's time.

There are three things which OMBE hopes for these conferences:

1. that they be meaningful - many times conferences don't seem to accomplish their objectives, hopefully, this one will;
2. that they be informative - that the minority businessmen present might receive the information and know-how to make their businesses more successful;
3. that they be productive - OMBE wants to see these conferences initiating production from minority businessmen and women. The OMBE goal and objective is for more minority businesses to make more money.

Mr. Cornelius then enumerated the many government programs and agencies which OMBE works with and commended NASA for being one which took an active role in making their information available to minority business men and women.

Commercial Applications of Space Technology - Mr. Harrison Allen

Mr. Harrison Allen resumed the podium and began to show some NASA technology which has already been transferred to industry:

- an aluminized plastic used for the satellite ECHO has been marketed in space rescue blankets, stadium blankets, and jackets;
- a fire fight rescue light which can be seen from 10-20 miles and can also be seen under water;
- a switch pack which adds more switches to a room;
- soon to be released, a device for the blind to identify money, and a stadium seat.

Mr. Allen then said that these were examples of technology which have been successfully transferred into marketable items and that this seminar would show the participants other technology which NASA could transfer to industry.

Mr. Allen introduced Mr. Ray Gilbert who would speak on Technology Transfer to the Minority Businessman. Mr. Gilbert is chief of special projects for the NASA headquarters Technology Utilization office.

Technology Transfer and the Minority Businessman - Mr. Ray Gilbert

Mr. Gilbert began by exhibiting a product which had been developed as a result of a similar seminar held in College Park, Maryland in 1974. A Spanish speaking company from New York City had received the contract from Sears.

Mr. Gilbert then said that he wished to address his remarks to the minority businessmen in the audience.

He stated that the record of minority economic development in this country was dismal. Although during the last 25 years technological achievement has been equivalent to that made in the preceding 200 years, minority businessmen have not enjoyed the fruits of technology. The statistical evidence is dismal. There are 325,000 enterprises in the U.S. having receipts totaling 11 billion dollars. 61% of minority businesses are in the retail, trade and services fields. 71% of minority businesses employ fewer than 5 people. These statistics compare unfavorably to the fact that 30% of the population in the U.S. are in a black, brown, red or yellow minority. There have been many bureaucratic programs designed to upgrade minority business. However, the profile has not significantly altered. Minorities must be represented in the areas of manufacturing, construction and finance for these are the areas of economic opportunity.

The means of accomplishing this goal is through utilization and transfer of technology. NASA is sponsoring these conferences for that purpose. NASA is the first federal program to go out into the community

and engage the minority contractor in the context of his needs and aspirations.

The workshop sessions give the minority businessman the opportunity to explore the means by which technology can benefit the economic growth of his business. In each of the workshops, an applications engineer from the NASA funded Industrial Applications Center at the University of New Mexico in Albuquerque can provide competent, professional assistance.

Bill Schinnik, the Director of the Industrial Applications Center in New Mexico, will describe the services of the centers. As a guest of NASA, the minority businessman will receive the technical search of his choice without a fee.

Mr. Gilbert then stressed that this arrangement with the Industrial Application Centers was a very important element. At the Federal Research and Development Consortium, there are many agencies interested in transferring technology, and a massive campaign is being mounted to bring technology into the hands of the state and local governments. This is a very complex process because mechanisms for transfer are sparse. On the state and local level, the federal government provided the technology transfer agent; however, the minority businessman has not received this kind of concern. NASA, however, provides the minority businessman with the services of the Industrial Applications Center personnel who complement and parallel the technology transfer agent. The Industrial Applications Center personnel are the interface between the

minority businessman and the technical data base, providing knowledge and understanding of the businessman's interests.

Mr. Gilbert reminded the audience that Mr. Allen had shown them examples of successful transfer. A study of 12 technological categories performed by the Denver Research Institute indicated that 25% of NASA's contributions to these fields resulted in commercialization.

NASA has committed itself to assisting in the economic expansion of minority businesses. However, the minority businessman must take the initiative to exploit that commitment. Persuasive reasoning and moral authority have been the main weapons in championing the cause of minority privileges and rights. However, this strategy requires patience and frustration. NASA wants the minority businessman to assimilate technology, grow economically, make money, and prove the point that "Bullshit walks; money talks".

Mr. Gilbert concluded by expressing the hope that the seminar might prove productive for the participants.

Mr. Harrison Allen introduced Mr. Bill Schinnick, Director of the Technological Application Center, University of New Mexico, Albuquerque to give a presentation on the NASA Industrial Applications Center System, including the scope of information available and the cost of the service.

The Industrial Applications Center System - Mr. Bill Schinnick

Mr. Schinnick began his presentation by addressing himself to the minority businessmen saying that there had been many people talking to them,

but that they could only be helped when they got a chance to talk back. He stated that his talk would be brief so that they could proceed to the workshops and have the opportunity to discuss their areas of interest.

Mr. Schinnick gave a brief background sketch on Technology Application Centers. He said that the New Mexico TAC is one of six Industrial Application Centers which NASA initiated ten years ago based on a new concept - that if NASA was going to transfer technology information, it must have technology transfer agents in the field talking with users, understanding their environment, problems, and needs. The New Mexico TAC serves the entire Rocky Mountain Southwest area.

NASA requires the TAC to charge a fee, for they feel that they are providing a value and industry should share the cost. NASA provides the base support and tools; the client pays the additional cost for the particular service. The New Mexico TAC has a small staff and they utilize the faculty and graduate students at the University to respond to client needs.

The TAC has a number of programs:

- Information Center - a one point location for finding clients information on any subject.
- Business and Industry Extension Program - funded by the state of New Mexico to provide information to small businesses in that state.
- Energy Information - a specialty of the New Mexico TAC.



- Application of Remote Sensing Technology - applied to problems of Environmental Research and Management.

Mr. Schinnick then said that his prime focus at this convention would be on the Information Center and the Industrial Program, as these were the areas which applied to the participants in the conference.

He passed out a bibliography of Abstracts of NASA Patents and indicated that copies would be provided for those who were interested. This bibliography included a list of 300 patents and an index. He explained that if a client were interested in procuring a NASA patent and wanted to determine what NASA offered, the technicians would research this bibliography and identify the patents related to his particular interest.

Mr. Schinnick then said that NASA had collected an information base comprised of all NASA research and that the data base had been producing a similar abstract once a month since 1962. The combined total of these abstracts is about 300,000.

NASA also realized that when businesses need help, they don't care if the information comes from NASA or other sources. Therefore, they have encouraged the TAC's to work with businesses whether or not NASA technology is involved. Consequently, the TAC has looked for other sources of information. The New Mexico TAC has access to over 85 computerized information bases spanning a large spectrum of information and can truly be considered an information center in the fullest sense of the word.

In the Business and Industry Extension Program for the small firm, about 40% of the requests are in the management area, 40% technological; the balance is a mixture.

Mr. Schinnick proceeded to describe the method by which technology is transferred. The first step is identifying the information which the client is interested in acquiring. In response to a request concerning problems, areas of interest, or interest in a new product or process, the TAC does a search of all literature bases to determine what exists. Normally, this costs between \$400 - \$500, but for participants at this conference, it is free.

Once it is determined where the information exists which can help the client, then technology transfer can take place. One method used is for the TAC to provide the client with a summary and evaluation of all the information pertaining to his particular situation. A large firm like Rockwell generally has an in-house research and development department and would not need this service; smaller firms might. A second method is providing short courses, an opportunity for the client to have a face-to-face encounter with the knowledgeable person. The cooking pins which Harrison Allen showed resulted from one of these short courses. A third method is to put the client into contact with the knowledgeable person: for example, a heat pipe design which was adopted for use on the Alaskan Pipe Line resulted from discussions with NASA technologists. On a smaller scale, a company in New Mexico which had received a contract for laying

up fiber glass had never done this before and encountered problems. The TAC found a firm in New Mexico which was not competitive with the first firm and had experience in laying up fiber glass. This non-competitive firm lent them a man to assist them. Mr. Schinnick stated that he considered this a pragmatic example of technology transfer. The fourth method of technology transfer is active participation of the TAC. Mr. Schinnick stated that technology transfer is less widespread than it could be because large corporations have their own research and development departments which develop most of the corporations' ideas. Smaller firms often lack the resources, experience and time to do extensive marketing research and technology transfer. Therefore, Mr. Schinnick's TAC decided to develop a concept from the NASA TECH briefs, and create a marketable product. They developed a chemical spot test, did market research, and performed the transfer functions. This product is available now to anyone at the conference who would like to market it.

Mr. Schinnick summarized his remarks by stating that the function of the TAC is to identify information and get the technology to the client anyway possible.

He said he wanted to hear from the minority businessmen at the workshops and said that the minority businessmen should tell the Technology Utilization technicians their problems and interests. The TU technicians would demonstrate the workings of the TAC and help the minority businessmen

find information. He said there would be two workshops, one on electronics, chemistry and management; the other dealing with machine tools, metal fabrication, and general management.

Mr. Schinnick concluded by introducing the two people who would be heading the workshops: Mr. Gene Burch, Manager of the Information Center; and Mr. Al Wire, Manager of the Industrial Program.

Mr. Harrison Allen concluded the morning session by directing people to coffee and the workshops.

## WORKSHOPS

### Machine Tool and Metal Fabrication Workshop: Mr. Al Wire, Moderator

Mr. Wire began the proceedings with a greeting and an introduction. In his introductory remarks he stated that he did not want to have a highly structured workshop; rather, he wished to have discussion with workshop participants. He stated an interest in hearing workshop participants discuss their business problems and questions.

Mr. Wire then began to explain his materials and handouts, encouraging workshop participants to help themselves to copies of each article. The information handed out consisted of the various NASA publications available to NASA Technology Utilization clients. Included among the handouts were TECH briefs, patent abstracts, and applications forms. Indicating Mr. Bill Schymlack and Mr. Jose Perez, both of whom were in the audience, Mr. Wire commented on the reservoir of resources available throughout the NASA T.U. system and NASA in general. Specifically, he indicated that Mr. Perez, and Mr. Schymlack were prepared to answer whatever questions participants might wish to ask. While passing out application forms, Mr. Wire stated that the information went well beyond the literature present in the room. The scope of searches extended into medicine, economics, and business management, as well as highly specific technical areas. Mr. Wire, indicating the NASA Patents Abstracts listing gave a very brief explanation of its contents and then encouraged people present to read through it carefully, choose those abstracts that interested them, and to call Mr. Wire so that he might send them out to the interested parties. He stated that this service would, of course, be paid for by NASA.

While passing out Search Request Forms, Mr. Wire encouraged participants to discuss their problems right then and there, or to return to their respective businesses, mull over their problems, the literature and their ideas and then to formulate questions on the form and send it in to Mr. Wire. A participant asked the following questions, "Can we run through a hypothetical problem here, that'll give us a good idea of the process we're discussing." As an example, Mr. Wire indicated a former client of his in Albuquerque. This client had been contracted to manage workshops. He "had no idea how to do it". This client went to the TAC for information on workshops for small businesses, and a search for relevant information was conducted and was successful. In another case, a small plastics shop wanted maintenance information; i.e., how to maintain its machine equipment efficiently.

Another participant asked, "If we submit a problem, get the information and then the problem continues despite the information, may we come again and reinquire?" Mr. Wire replied, "Yes . However, the likelihood of this happening is somewhat reduced by the fact that our researcher will thoroughly discuss your problem with you before initiating the search. Well before we begin, we make sure that the problem is clearly understood, defined, and stated." When another participant asked, "Can photographs help? I have a specific problem and photographs to help state it", Mr. Wire answered in the affirmative.

Mr. Wire, resuming his presentation, began to speak of the scope of the information available. He stated, "We literally can search the world's literature on your work. The scope of available information is so great, it's impossible for an individual to do similar searches by himself." Mr. Wire stated that if and when a search yielded no information, that it was a very good in-

dication that no research was being done in that area.

A question was asked, "Can you direct your clients to government labs and/or needed technology for specific problems? For testing?" Mr. Wire replied, "Yes we've been able to direct people to labs and technology for direct assistance, and for testing specifically." For example, Mr. Wire spoke of a machine shop in Albuquerque which was trying to use a special metal alloy for tiny machine parts. The TAC people found out the work couldn't be done because of the make-up of the alloy.

A member of the workshop stated, "Any government contractor with over \$1 million dollars in contracts from the government must have an affirmative action program. He has to solicit the services of minority contractors. He has to have a minority representative in the company whose job it is to find out who the minority business representative is in the various large corporations who do government work. For example, write to Martin Marietta, to their minority business representative and you can get help with your problems. Also, write to government contractors in general. Remember, evaluation criteria under which government contracts are let out specify that affirmative action programs be instituted. Rockwell seems to be really committed to helping minority businessmen."

A participant said, "I came here to see what information you have with respect to metallurgical problems. Do you have any?" Mr. Wire answered, "We have a fantastic reservoir of information. Someone for example asked how to grow MILO in Australia. We gave him the needed information. Yes, lots of research on metallurgy, as a matter of fact, ask us anything. Metallurgy - we have riches of material available on that. Now the closer you specify the problem, the

better. That way you get specifically related and useful information. The more specific the question, the more specific the answer."

The question was posed, "This service, free of charge?" Mr. Wire responded, "yes. Usually a search will cost you about \$450." Someone asked, "What is a base?" Mr. Wire answered that NASA, Chemistry, Abstracts, the New York Times, etc. were bases.

A businessman wanted to know, "What can our company manufacture? We're a high tolerance machine shop. Do you have any manufacturing leads, new products?" Mr. Wire advised him to, "Write that into us. Cast your question in terms of diversification opportunities. Clearly state your qualifications so we can find manufacturing possibilities directly related to you."

Mr. Wire now began discussion on procurement questions; how to do business with NASA. He suggested that the represented companies get their names on source lists of various companies. At this point, the NASA minority business representative in the audience began to speak. He spoke of the NASA source list and the NASA procurement listing. "If we have requirements, we go to our source list and then we send out an RFP to the companies that are qualified. Also bids and RFP's are posted on the bulletin board in Building 100. All of you should put your name on the source list. Betty Balmer who was downstairs earlier - she's a minority business representative. I'd like to have a resume from each of your companies. I'll send these resumes out to companies that might be able to use your services. Even if you don't have the full technical capability to do a specific job, we'll help you get



it and get 8a contracts."

Mr. Wire resumed - "NASA has patent regulations that will permit exclusive licensing of NASA patents. So, you might ask for abstracts and see if any of these patents are exploitable in your business and then pursue it."

"After all this", Mr. Wire continued, "you may ask yourself, what's next? You have to come up with ideas and plans for your company, and take advantage of this program."

Mr. Ray Gilbert advised the participants, "Take advantage of this program. You have 30 days in which to do it. For administrative reasons only, we want to be able to control this thing. Fill out your forms and then send them in." Someone asked Mr. Gilbert, "If you give us a license, will you also give us some insight as to the market for that product?" Mr. Gilbert answered, "Any businessman worth his salt can market a product if he establishes the existence of a market for his product. He'll find the money, resources, etc., he'll get it. Sometimes we'll give you that insight. If your product is in the public domain, the probability is that yes, we will give you a market analysis. As to the depth of the analysis, well, if it's in the public interest. For example, someone came to us some time ago with a NASA patent that had application as a measuring device for the performance of machine operators. His market: the transportation industry. We helped him, we're still helping him." It was asked, "Who are 'We'?" Mr. Gilbert replied that it was his office in Washington, D.C. - The NASA Technology Utilization Office.

Mr. Wire concluded his presentation by saying, "If you want to call us, do so. To discuss your questions or whatever."

At this point he adjourned the proceedings for luncheon.

Electrical - Chemical Workshop - Mr. Gene Burch, Moderator

Mr. Burch initiated proceedings by introducing himself as the manager of the Information Center at the TAC located at the University of New Mexico.

Mr. Burch then proceeded to discuss the regional centers distributed throughout the United States. He did not specify all centers, only naming the general geographical areas that were serviced by the diverse centers.

Mr. Burch requested that all persons present introduce themselves.

Mr. John Gutierrez, Teletronics Lab  
Mr. Charles Stein, State Office of Minority Business -  
San Antonio  
Mr. John Armendaris, Deputy Director of LBDO, U.S. DOC-  
Texas  
Mr. Pat Moran, LTV Aerospace - Dallas  
Mr. & Mrs. Sart, Denver, Colorado  
Mr. Wilbur Hunt, EXXON  
Mr. Dan Flores and Co., Chimex Systems Inc.  
Mr. Larry Ortega, Caspan  
Mr. Jim Dixon - NASA  
Mr. Miguel Rojas, Rojas Welding  
Mr. Jesse White, Data Transformation  
Mr. Joe Williams, SBDO Texas Southern University  
Mr. Stan Stock, Shell Oil  
Mr. Harrison Allen, NASA

Mr. Burch assumed the podium and began to speak of the RDC system. He began by detailing funding sources. Mr. Burch said, "40% of our funds is NASA money, 60% comes from the University and from sales." The center with which Mr. Burch is directly associated services the area enclosed by the Rio Grande and the Mississippi. TAC's actively pursue businesses that can use their information, and they attempt to disseminate the information. The TAC functions as a business. It has all the components of a business; advertising,

marketing, computers, budgets, etc. The Albuquerque TAC involved 50 people in total, 10 of whom are full time staff. Others are graduate students who are selected on a competitive basis as ambitious students having completed bachelor degree requirements and who are presently involved in graduate studies that bear relation to the work. Mr. Burch spoke of his own history very briefly. He stated that he had spent his early training years with the USAF. He then went on to work for General Electric for an unspecified amount of time. For the past 10 years he and Mr. Schinnick have been at the Albuquerque TAC. They organized and established the center jointly. Mr. Burch stated, "I hope I have come equipped to listen, to answer your questions. He suggested that he wished to dialogue with the participants and not to conduct a monologue.

Mr. Burch proceeded to pass out information request forms and to give instructions as to their use. He explained that NASA would be underwriting the expense of retrieving information. By way of example, Mr. Burch discussed an information retrieval search for printed circuit boards (PCB's). The computer prints out all findings, all government contracts given out for PCB's, and all reports relevant to PCB's, providing 10 years of stored information. Furthermore, that information will be chronologically listed according to date of acquisition, discovery, whatever. Specifications as to dates can be made, and specific information about PCB's can be retrieved.

The job of TAC personnel is to transfer everyday language into the language or logic of the computer. TAC personnel read the questions, then call to advise the clients of the projected plan to verify that they're on the

right track. Other companies pay TAC centers a deposit at the beginning of their fiscal year. Throughout the year they give sub-order request for which prices are quoted before actual performance of the work. At the end of the year, services rendered are subtracted from the original deposit. NASA will pay the cost of this service for the participants, including the cost of documenting the order.

The TAC computer stores report numbers, titles, researchers and NASA centers responsible for that specific report, research, or information. The computer produces a complete citation/reference, producing a summary abstract. The abstracts refer to specific documents containing the needed information. The TAC centers will locate and supply them.

Mr. Burch stated that their specific intention was to get NASA information into the economy. He stated that information requests would be plugged into what he called a "NASA information base". He conditioned that last statement by stating that if the information requested went beyond the scope of NASA information that they would plug into that information and retrieve it as well. For example, he stated, "if it's chemistry, we won't stop at NASA, we'll go into chemical abstracts...a collection of chemical information dating back into the 1800's. We'll try to get you the best coverage possible," Mr. Burch concluded.

At this point, Mr. Burch gave detailed breakdown and description of the information retrieval process. Specifically, he dwelled on two areas: Evaluation and Interpretation. In the evaluative process, the engineer reviews

all the information which he has received. He then orders it in a fashion which responds to the question, in the technical order that reflects the order of the issue at hand. That is, the information will fit the logical cannons of electronics, chemistry, or whatever the field is. In the interpretation process, the technician interprets the material at hand if this is necessary for the client. This involves a fee for the participants.

At this point Mr. Burch passed out Search Request Forms. He suggested that the participants take more than one form. He then went on to explain that without questions from the participant he could do nothing. He stated that asking questions was the fundamental responsibility of the participants present.

Mr. Burch then passed out an information search to the participants, entitled Management Bibliography for Small Businesses. He explained that it was a search that had been conducted for a New Mexican businessman who had then given his permission to hand out the search to the conference participants. He gave one copy to each participant, explaining that it would be of great use to all of them as it contained very valuable information.

After completing the aforementioned, Mr. Burch distributed another search, entitled Machine Tools and Other Equipment. He began to discuss the formulation of questions and to encourage participants to submit whatever questions they wished. He spoke of one client in New Mexico who had asked about the commercial raising of ebras. NASA had all the information available.

Mr. Burch requested that the participants not freely disseminate the information that they were receiving and that they were to receive once the searches were completed. Mr. Burch said that there were copyright laws to be respected with respect to this information, hence the caution in spreading the information. He did say that NASA and other government material was public and not subject to the same copyright constraints.

In regard to the Patent Abstracts Bibliography, Mr. Burch explained that the patents owned by NASA could not be used without NASA's permission. He explained that NASA releases these patents to companies who are capable of marketing the products. Mr. Burch suggested that participants request the bibliography on their forms. He explained that the patents were royalty free, and were assigned subsequent to a NASA investigation of the company requesting the right to use the patent.

At this point, he explained the workings of the NASA TECH brief, and told participants that they could receive them regularly on a subscription basis if they so desired. He also asked participants to help themselves to whatever information they wished, as he had brought it along for that purpose.

Mr. Burch then opened the floor to discussion and/or questions. He distributed his business card and encouraged participants to utilize the services his center offered. He gave participants pricing information: price range - \$125 - \$400. He did specify that the first time around there would be no charge as NASA was paying the bill.

Mr. Harrison Allen, participating in this workshop, told participants that the most current information was also available, information that was not publicly available. Mr. Allen also explained that if the participants needed to speak personally with a researcher that the interview could be arranged.

Mr. Burch then proceeded to distribute more forms and information. Specifically, he passed out a list of questions that New Mexican businessmen had asked in times past. Mr. Burch explained that the list was intended to give participants an idea as to the nature of questions asked.

Mr. Gilbert added, "We're very anxious to help you, and to perform this service for you. For administrative reasons, you have to do this within thirty days."

Mr. John Gutierrez asked, "What is the turn around time for the information?"

Mr. Burch replied, "It depends upon the question. Anywhere from 36 hours to 10 - 20 working days."

Mr. Gilbert said, "If your problems is such that you need a personal visit from Mr. Burch or someone similar; if in my judgment you need a personal visit, I'll pay for it. Depending on the magnitude of the problem, if you need it you'll get it... We're very anxious to help you.

Mr. Burch then stepped in and closed the proceedings, adjourning the meeting to lunch.



### Luncheon Speaker.

Mr. Alex Mecure was introduced as the luncheon speaker. Background information concerning his education and professional experience was presented. Mr. Mecure is presently Vice-President of the University of New Mexico; Chairman of the Board of the Associate South West Investment Company, MESBIC; Board Member of the National Council of La Raza; and Chairman of the Board of Siete Del Norte.

### Luncheon Presentation - Mr. Alex Mecure

Mr. Mecure commenced his presentation with some stories and jokes concerning New Mexico. He continued by saying that New Mexico has one of the largest Indian populations in the United States; including 19 Pueblo tribes, 2 Apache groups and 1 Navajo group. As the Chicanos moved north and the Americans extended westward, the Indians' land was gradually taken over until the Americans felt it necessary to give them reservations, mainly in very desolate areas. However, recently it was discovered that the Indian reservation land is the location of major uranium, oil and gas and almost 10% of the coal deposits in the United States. Somebody must have taken care of them. Peter McDonald, Tribal Chairman of the Navajo Nation, recently stated that they wanted to help the United States solve its energy problems. However, they wanted to make certain that both the environment and the people would gain the benefits. This is quite a positive statement from one of the leaders of a minority groups in this country, according to Mr. Mecure.

Mr. Mecure informed the audience that Mexican Americans in New Mexico control 40% of the vote and have therefore always had senators and a

congressman, but now they have also elected a governor. Because Mexican Americans comprise only 30% of the population but control 40% of the votes, it is said that "our only resource is the power of the vote, but we exercise it as often as possible."

Mr. Mecure then proceeded to discuss some of his major concerns. Some years ago, this country became concerned with minorities, particularly their problems relating to the lack of economic opportunities which are necessary for the development of a people. It has generally been assumed that minorities have been the beneficiaries, disproportionately, of the kind of transfer payments which represent welfare, social security, and unemployment. Mr. Mecure stated that, "None of us are prepared to dispute this impression; it is largely true." Some people in the United States finally concluded that the only way to achieve the full development of all the people was to assure that there could be equal participation in the economic system of the country. Some white, some Chicanos, and many blacks were involved in this movement, including Berkeley Burrell, Jesse Jackson, and Leon Sullivan. The poverty program and the National Advisory Committee on Minority Business Enterprises were part of a national effort to determine a solution to this problem.

Mr. Mecure, along with many other people, has been attempting to find a solution to this problem. Although the statistics on growth of the total amount of business done by minority businessmen in the past 4-5 years have been impressive, it is actually only a drop in the bucket. Collectively, the minority banks in this country hold \$1 billion worth of assets. There are single banks

in this country with that worth. Obviously, this has not resulted in tremendous amounts of capital accumulation to minority communities. Most minority businessmen are on the periphery of American enterprise; they are small and relatively uninvolved in advanced technology and the mainline of American business. Mr. Mecure asserted that one of the most important things which has recently occurred, is that after the initial euphoria over the minority capitalist thrust in this country, we have now become more realistic. At first, we provided technical service centers and small loan development programs. Most of the small loans were too small, premeditated to assure that the businesses would fail. Most of the technical assistance was provided in such a shallow fashion that it provided very little additional capability for the small businessman. The universities were unsympathetic even the black institutions. The black schools were small and did not have the resources to provide technical support. The large universities were uninterested although they did attend the conferences. Minority leaders generally uninterested assumed that the SBA and OMBE with their limited resources could do a comprehensive job, but the territory was too great to be covered.

There has been tremendous fragmentation; now there are minority enterprise small business investment companies which haven't been overwhelmingly successful, but they are a beginning effort. The minority banks have started to grow; they are necessary as an operating source of capital for the minority businessman. But the most important thing which was mentioned at this conference, according to Mr. Mecure, was that the government realizes that we cannot approach the minority businessman from the standpoint of identifying his skills and

setting up an 8(a), and assume that the businessman will know that they are available, let alone in his field. There are many 8(a)s but these contracts may not be in the businessman's field. It may be that the federal government's specifications are so high that most small businessmen cannot meet the standards without some dedicated technical assistance. At the workshops this morning, there were many businessmen who run capable and competent operations, but they are small businesses.

Mr. Mecure was pleased to notice that the speakers representing NASA indicated that NASA recognizes that the solution to the problem must be comprehensive. Besides providing technological information on new products and processes, it is necessary to provide technical assistance and equipment. When Mr. Mecure was president of New Mexico Technical and Vocational School, he received much equipment from the National Industrial Equipment Reserve. The federal government must do this: build a reserve for the special equipment that is necessary. Fragmented financial assistance will not produce a tremendous amount of gain because the minority businessman needs technical support to progress. The Technology Utilization Program is a method of gaining knowledge. NASA is taking an aggressive stand to involve minorities in acquiring technology which will render them competent to satisfy both federal government and American industry needs.

Mr. Mecure then described the problems involved in technology transfer, using the state of New Mexico as an example. There are over 1 million people residing in New Mexico; it is the fifth largest geographical state.

There are over 2000 faculty members in the state's universities. These institutions have strong programs in mineralogy and mining, and engineering related to the energy field. However, the university system has not concentrated on discovering methods of implementing a technology transfer so that the community might be improved by this knowledge. NASA's TACs have been educating the universities on this topic. Mr. Mecure complimented NASA for its efforts in this direction.

The social situation in the United States cannot improve when 30% of its people remain on the periphery of the society. Local universities should learn to take over the technology transfer function so that the technical expertise which is now contained in the universities might benefit the community.

Mr. Mecure concluded his presentation by asserting that the universities, the federal government, and even the minority businessman himself have not done enough to take advantage of available resources. The small businessman must teach the federal government and institutions to respond to his needs. If this conference results in 3-5 businesses gaining valuable information for growth, it will have been successful. If it further results in systematizing ways by which the agencies and the businessmen can relate to each other, then there is hope. NASA, OMBE, SBA, the Coordinating Council, and universities need clearer understanding of their responsibilities. There is much skepticism on all sides because there have been many conferences in the past. Whether or not this one is productive depends largely on the participating minority businessman. Mr. Mecure closed with a request for assistance from the minority businessman, "If we are going to be better at our jobs, we need your help."

### Afternoon Session

Mr. Harrison Allen reconvened the conference by informing the audience that Mr. Matthews, who was scheduled to speak on Patents and Licensing, was unable to attend. He introduced Mr. Sloth who was to take his place.

### NASA Patents and Licensing - Mr. Sloth

Mr. Sloth began his presentation with several jokes. He then proceeded to give a brief history of NASA, stating that it was established by Congress in 1958 for the specific task of conducting research related to space travel and the general betterment of mankind. He stated that Congress had stipulated that all information derived from such research was to be stored and disseminated. All innovations were to be protected by patents and then licensed out to the public sector. Mr. Sloth then discussed the NASA relationship to universities and private contractors, stating that all inventions and innovations were filed with NASA, who then patented them.

After giving a brief history of American patent law, Mr. Sloth referred to the literature distributed throughout the conference room and encouraged participants to help themselves to it. Mr. Sloth then spoke of those who objected to patents as being institutionalized monopolies. He stressed that patents are a good monopoly because they have been the basis of many businesses who have benefitted from patent protection.

Mr. Sloth concluded his presentation on patents by referring conferees to the available literature, and displaying various products that were patented and available for commercial production. The first example Mr. Sloth displayed was an anti-fog spray developed by high-school graduates, a simple

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

combination of three chemicals that astronauts used to de-fog visors. He then stated that over 50 companies have license for it and are trying to market it. For another example, Mr. Sloth demonstrated a life raft fitted with a radar recovery cover.

He encouraged conferees to read the NASA Patents Abstract Bibliography in order to find marketable products. He told the conferees that the Bibliography could be found in public libraries and also passed out application forms for those who wished to receive their own personal copies.

Mr. Sloth gave a brief outline of the two available patent types: exclusive and unexclusive. The presentation distinguished between the two types and gave the rationale for each. A participant asked, "If one gets an exclusive patent and then later finds out he cannot handle it, can he then sell the rights to someone else, or do the rights revert back to NASA?" Mr. Sloth replied that he could sell it. Mr. Sloth concluded his portion of the program.

Mr. Harrison Allen introduced Mr. Chuck Kubokawa delivering the presentation, "You can't eat moon rock."

"You can't Eat Moon Rock" - Mr. Chuck Kubokawa

Mr. Kubokawa began with a joke. He then stated that, in an effort to help minorities, the NASA Equal Opportunity Programs Office has joined with the Office of Minority Business Enterprise to promote the business interests of minority groups. NASA is one of two government agencies that produces actual products: the government printing office and NASA. NASA sells technical power.

Mr. Kubokawa then listed the several problems that small businesses have, giving a bit of detail on each item, and showing slides which were correlated to his presentation.

1. Know your capabilities and limits.
2. Establish a good business group. Have expertise in administration, finances, and personnel.
3. Select a product that has potential.
4. Analyze your product, the market, etc.
5. Ask yourself, Do you need to train workers?
6. Use a systematic approach in selecting your products.
7. Note the need for feeder capital.
8. Compare the physical size of the product as correlated to the size of the manufacturing plant.
9. Technical know-how and expertise necessary for the business must be acquired.

Mr. Kubokawa concluded his presentation by stressing the difficulties of the small businessman and the necessity for patience.

Mr. Harrison Allen introduced Mr. Dan Sword by explaining that OMBE is supported by several programs; MESBIC is one of these. Mr. Dan Sword is the General Manager of Space Ventures, Inc., and he will explain the MESBIC role in the marriage of Technology to Minority Business.

Space Ventures, Inc. MESBIC - Mr. Dan Sword

Mr. Sword began by giving a brief history of Space Ventures, Inc., a wholly owned subsidiary of Rockwell International. He stated that the company was put together under SBA 8a terms, and was organized with \$1 million in cash.



Mr. Sword had several slides that were correlated with the different sections of his presentation. Mr. Sword stated his purpose: to tell conferees what a MESBIC is. The first three slides shown demonstrated the logo of his company, the company license, and a chart showing the financial history of the firm. Mr. Dan Sword stated that the objective of a MESBIC is to provide feeder capital to small minority owned firms. He then showed another slide that outlined the relationship between OMBE, SBA and funding to Space Ventures, Inc.

He then explained their working relationship with the Department of Commerce by way of an analogy: the Department of Commerce acts as the quarterback. The Department of Commerce helps with the marketing; they have recruited Sears, Roebuck & Company to help as well.

Mr. Sword stated that his people were in the process of looking for marketable items for various clients. He characterized this effort by saying that it had limited itself to the aerospace industry because they themselves were aerospace oriented. Their motive is to help clients both technically and financially. He stressed that Rockwell International felt a social obligation to its community. The company desires to be thought of as a concerned company; desiring community support for continued government support. He concluded by saying, "People have asked me, 'what can I do?' I tell them, 'You can help by identifying minority businesses and telling them about MESBIC services and other sources of help. You can help by affirmative action purchasing, direct your purchasing to minority companies.'"

Mr. Allen adjourned the proceedings for a 15 minute break.

Mr. Allen reconvened the conference by introducing Mr. Sy Gottlieb, Manager of Small and Minority Business Administration, OMBE

How to do Business with Rockwell - Mr. Sy Gottlieb

Mr. Gottlieb began by informing the participants that the Office Minority Business Enterprises makes sure that buyers use minority firms by making them accountable. Any award over \$5,000 has to be justified; that is, why it was made, to whom and why, and why no minority firm was obtained, if that is the case.

The Office of Minority Business Enterprise publishes a minority source directory and newsletters for their buyers, as a reminder of their duty to subcontract to minorities. These directories and information discipline buyers to follow certain buying patterns.

Mr. Gottlieb then addressed the conferees about their own activities. He began with an analogy designed to demonstrate the need for aggressive marketing. He encouraged participants to make themselves known to buyers, potential customers, and the market in general. He encouraged conferees to find the trade magazine for their field and to utilize it for free directory listings. He suggested that conferees market aggressively to government agencies as well; for example, the SBA, which publishes a newsletter with listings of engineering firms.

He concluded by encouraging the conferees to present themselves in a professional manner, saying "Be competitive."

Mr. Harrison Allen introduced Mr. Jim Pierce substituting for Mr. Bud Goldstone. Mr. Pierce of Rockadyne concluded the Rockwell International

Presentation.

New Technology from the Space Shuttle Program - Mr. Jim Pierce

Mr. Pierce spoke about the new technology being generated by the space shuttle program. He employed slides of the Rockwell production facilities and the recent developments generated there. His comments were brief and maintained a general nature. He concluded by saying that Rockwell was very interested in assisting minority business development in areas of sophisticated technology production.

Mr. Harrison Allen introduced Mr. Richard Sewing of the Dallas Regional Office of the Office of Minority Business Enterprise.

Services Available through OMBE - Mr. Richard Sewing

Mr. Sewing gave a brief presentation covering the business services available to the minority businessman through OMBE. He gave a brief description of the functions of Business Development Organizations, Business Resource Centers and the expanded service of call contract capabilities. Mr. Sewing concluded his presentation by naming the local OMBE affiliate in the Houston area for the information of the participants.

Mr. Harrison Allen then re-introduced Mr. Ray Gilbert for some concluding remarks.

Conference Conclusion - Mr. Ray Gilbert

Mr. Gilbert presented a general recap of the program, emphasizing the 30 day limit for initiating a search by each participant. Mr. Gilbert then conducted a question and answer period during which the conference evaluation questionnaires were distributed to the audience. After they were completed,

they were collected, and the conference was adjourned by Mr. Gilbert, announcing directions to the Hospitality Hour following the formal proceedings.

#### IV. EVALUATION

The agenda format was structured to give the audience a brief introduction to the purposes of the conference, followed by workshops in which each participant would be given the opportunity to address his specific business interests through interaction with the technology utilization technicians. The luncheon speaker, Mr. Alex Mecure, a well-known authority in the field of economic development and education, was scheduled in order to provide cohesiveness to the overall program. The afternoon session was designed to introduce other important elements involved in the utilization of technology, and to present some of the private sector and governmental interests which are involved in the support of minority business and technology utilization.

The program was generally well-received, and the evaluation questionnaire highlighted interest in some particular areas. The questionnaire (see Addendum IV) completed by the audience at the end of the program was designed to be short and simple, with the purpose of providing feedback relevant to the quality of the program and its preparation. Of the 23 questionnaires returned, 16 were filled out by minority business representatives, three by Rockwell representatives, and one by employees of NASA, LTV, SBA and OMBE respectively. The following relationships were generated from the 23 responses.

Eight of 21 respondents had contact, prior to the conference, with the NASA technology utilization program. Approximately 50% of the

13 companies which responded to the question had previous contact with OMBE funded organizations.

Sixty-eight percent of the twenty-two participants who responded indicated that they did receive sufficient advance notice and that the invitation was clear as to the purpose of the conference. Eighteen out of twenty-two or 81%, indicated that they received sufficient information about transportation and lodging. Approximately 64% of the respondents to the question indicated that the personal telephone call helped them to decide to attend.

Only three respondents felt it was too long. The majority in both cases neither felt the conference was too short nor too long. Seventeen of twenty respondents indicated the information was easily enough obtained and eighty-six per cent said the presentations were informative, and relevant to their business interests.

All of the participants who responded indicated that the conference staff and workshop moderators were well-informed and helpful.

Conference participants commented on the conference:

"All talks should be nitty-gritty how-to-do-it types such as workshops."

"The MESBIC talk should be on "How you can get MESBIC help in detail."

"No political or philosophical talks."

"O K."

"Look good."

"Speakers should be given more time for their dissertations."

"Improve 'All', entire conference."

"Question and Answer session should be longer in workshop. Night or weekend sessions should be considered."

"Best conference ever attended."

"Make them at night."

"Shorter speeches."

"More relevant information on service industries."

"More time for audience participation."

Eight-six percent of the respondents indicated that the information they received at the conference was sufficient; and slightly more than ninety-five percent stated that the information clearly explained the purpose and proceedings of the conference.

The following is each segment of the agenda, ranked according to the number of participants who stated that the section was directly relevant to his needs and desires:

- 14 - Technology Transfer and the Minority Business
- 14 - How to do business with Rockwell
- 13 - Workshops
- 11 - Services Available to Minority Owned Businesses through OMBE
- 10 - New Technology from the Space Shuttle Program
- 9 - Space Ventures MESBIC
- 9 - The Industrial Applications Center System
- 7 - Patents and Licensing
- 5 - We can't eat moon rock

When asked which segments of the agenda should be expanded, the

respondents indicated a strong interest in procurement, "How to do business with Rockwell" and the Technology Utilization workshops. The following ranking by number of positive indications for each section was generated.

- 8 - How to do business with Rockwell
- 7 - Workshops
- 5 - Technology Transfer and the Minority Business
- 4 - Space Ventures MESBIC
- 4 - Services Available to Minority Owned Businesses through OMBE
- 3 - New Technology from the Space Shuttle Program
- 2 - Patents and Licensing
- 1 - The Industrial Applications Center System
- 0 - We can't eat moon rock.

All of the participants who responded on the questionnaire indicated that the information presented at the conference was in an understandable form and nearly 95% stated that the material was wide enough in scope.

The evaluation questionnaire provided information enabling us to critique the program content and its management.

While sixty-eight percent of the respondents said they received sufficient advance notice about the conference, thirty-two percent said they did not. Only twenty companies sent representatives to the conference which was a thirty percent drop from the confirmation list. These factors taken together might suggest that a longer lead time is needed for future conferences in areas where the target population is not concentrated.

The general response was that sufficient logistical information



was provided for each participant to attend the conference. Future invitation packages will be structured similarly, but expanded to clarify detail.

Almost all of the respondents felt that the information presented was sufficient and clearly explained. The Industrial Application Center personnel from Albuquerque were well-received and should be seriously considered for use in future conferences.

The general comments on the questionnaires follow a similar pattern: there should be more workshops, more participant interaction, longer question and answer periods, and fewer and shorter speeches.

V. CONTRACTOR'S OBSERVATIONS AND RECOMMENDATIONS

In general, the conference proceeded smoothly and the content was well accepted. However, there were indications that some areas could be improved in the production of future conferences. The preparation for the Houston conference was hampered to a degree by a change in location after the contractor's site visit; and difficulty in coordinating the agencies and agency divisions involved with the program. While the difficulties were overcome, a clear need was indicated for defining and coordinating decision making responsibility.

The conference registration process did not proceed in as orderly a fashion as was desired. The registration form which was to be filled out by each person required more time than had been expected, therefore, creating a bottleneck in the process which allowed many of the federal agency attendees to side-step the process. The format for the registration form will be simplified for subsequent conferences. In addition, the physical arrangement of the registration area will be planned so as to cause an inconvenience to anyone who attempts to bypass the registration process.

The Gilruth Recreation Center provided by the Johnson Space Center generally facilitated the conference proceedings. The single most prominent area for improvement was the general sessions area, which was contiguous to the luncheon area. The large open lunch area behind the audience provided a setting for distracting side conversations and

sub-meetings. It is the contractor's intention to avoid a repetition of these kinds of distractions by limiting the conference presentation area to house the audience and speakers only.

The audience responded positively to the early morning proceedings, the Technology Utilization Workshops, and the luncheon program. Soon after returning from lunch, however, the participants began to show signs of restlessness, and by three o'clock, some participants had begun to leave. It appeared to the contractor that after experiencing the workshops, the participants grew disinterested in the presentations.

The experience gained from the Houston conference, both positive and negative, is being incorporated as a guide into the planning process for the subsequent Los Angeles conference. The agenda has been significantly modified to lengthen and augment the Technology Utilization Workshops, procurement workshops have been added, and the number of participating firms has been increased. Presentations have been eliminated or shortened, and a question and answer period has been formalized.

In conclusion, this first conference was generally successful, with a number of areas exhibiting a need for improvement. These areas have been studied, improvements have been made, and the changes will be implemented in the planning and production of the next conference. Thus, it is expected that future conferences will be benefitted by the experiences gained at the Houston conference.

## APPENDIX II

Los Angeles Technology Utilization Conference

Held May 3, 1975

University of Southern California

## TABLE OF CONTENTS

I.	PREFACE.....	1
II.	PREPARATION.....	2
	A. Agenda.....	2
	B. Site.....	3
	C. Recruiting Minority Businessmen.....	3
	D. Formal Invitation.....	4
	E. Follow up and Final Preparations.....	5
III.	CONFERENCE.....	6
	A. Minority Businessmen Participation.....	6
	B. Proceedings.....	6
	1. Introduction.....	6
	2. Welcoming of Participants to USC.....	6
	3. Welcoming of Participants to Conference.....	7
	4. Conference Purpose and Objective.....	7
	5. Industrial Application Center System.....	8
	6. Technology Utilization Workshops.....	10
	a. Introduction.....	10
	b. Workshop I - Chemical/Plastics.....	11
	Workshop II - Electronics/Communications.....	13
	Workshop III - Mechanical Design.....	15
	Workshop IV - Pollution.....	17
	7. Luncheon Presentation.....	20
	8. Commercializing Technology Workshops.....	23
	Workshop I - NASA/JPL.....	23
	Workshop II - IBM.....	25
	Workshop III - Rockwell/Sears.....	27
	9. Question and Answer Period.....	29
IV.	EVALUATION.....	31
V.	CONTRACTOR'S OBSERVATIONS.....	38
VI.	CONTRACTOR'S RECOMMENDATIONS.....	40

## I. PREFACE

The Technology Utilization Conference held on May 3, 1975 at the University of Southern California in Los Angeles, was one of the key conferences in this series. Although the turn-out for the conference was smaller than predicted, the companies which did attend were significantly better equipped to take advantage of the technology transfer process due to their more advanced technical capabilities and their higher sales volumes. It is expected that a number of companies which attended will engage in successful transfer procedures.

The preparation for the conference followed the same basic system which was found to be efficient and productive for the first conference, with several alterations made to improve the process. The resources made available by NASA and OMBE were again utilized to provide information and assistance. Although there were several problems in coordination, the preparation generally proceeded smoothly.

The proceedings of the conference, modified in accord with evaluative decisions suggested by the first conference, proceeded smoothly and were generally well-received. However, additional changes will be made for the improvement of future conferences based on both participants' and contractor's evaluations and comments.

The expressed purpose of this series of conferences is the successful transfer of NASA technology to minority businessmen. The Los Angeles Conference is expected to produce a number of such transfers, and can therefore be judged as largely successful.

## II. PREPARATION

The preparation for the Los Angeles Conference followed the procedures established for the first conference, with several modifications made to improve the process. The essential considerations involved were:

- 1 - the development of a detailed agenda, including events and key personnel;
- 2 - the selection of a site and identification of key contact people;
- 3- the identification of minority businessmen in the area;
- 4 - the development of a logistics package;
- 5 - the follow-up and preparation on site.

The agenda was prepared by the contractor with several alterations designed to involve the participants in more dialogue and interaction with the resource personnel. The structure of the morning session remained intact; however, agenda participants were instructed to address themselves more specifically to the Technology Utilization Program. The Technology Utilization Workshops remained essentially the same, although a workshop cross-over session was added to allow participants to sample several workshop topics. The afternoon session was altered to include more interaction between participants and private sector resource personnel. Commercializing technology workshops were substituted for individual presentations by private sector firms; in this way, it was expected that minority businessmen would have the opportunity to dialogue with representatives of the companies of their choice. A technical panel, question and answer period was added to encourage the participants to discuss any problems or areas of interest which they had encountered during the day. Basically, all changes made in the agenda were focused on improving participation by the minority businessman.

Agenda participants were chosen and contacted on the basis of suggestions made by the OMBE/NASA Task Force Committee. OMBE and NASA personnel were contacted to present the introductory sections of the program; WESRAC personnel to man the Technology Utilization Workshops; and a number of private sector firms to participate in the Commercializing Technology Workshops.

The site selection process was again a problem area for the Los Angeles Conference due to a repeat of the "midstream" changing of site facility by NASA. An informal agreement with Rockwell had been extant since the pilot project of May 1974 to hold the Los Angeles Conference at the Rockwell Seal Beach Facility. The contractor made his site visit, arranged for logistical considerations, and made contact with key personnel for the planning of the conference. After approximately two weeks of logistical work had been done, NASA agreed to a proposal by the WESRAC Industrial Applications Center personnel to hold the conference at their facilities. Thus, two weeks of planning were rendered unusable, and the conference for one of the key cities in this series was managed blind. After the second site, the Instructional Television Center at the University of Southern California, was committed, all logistical arrangements, personnel contact, and facility arrangements were re-done via telephone with the assistance of the WESRAC staff.

The process of identifying and recruiting minority businessmen was accomplished through the assistance of the OMBE regional office which provided a listing of 150 minority businesses in the area with the requisite criteria in terms of technical interest and capabilities. Minority



business associations, such as LAMA and NABM, were contacted to provide additional input concerning interested businessmen, and to publicize the conference to those of their membership who would find the conference valuable. Additionally, the MESBIC's in the area were informed of the conference in order that they might provide information concerning interested businessmen and attend the conference as resources for the minority businessmen. The final invitee list included 160 businesses. The OMBE regional office indicated that of the 150 businesses which they recommended, the attendance rate for companies in the LA area should be 80%, while those from outside the LA area should be expected to produce a 30% turn-out. From these figures, an expected attendance of approximately 120 companies was predicted.

The invitational mail-out package was prepared and sent one month before the conference date, containing all necessary informational materials and a stamped, self-addressed confirmation card. A promotional flyer was added to this mail-out to attract the minority businessmen and pique their interest. Less than 10% of the confirmation cards were returned before the telephone follow-up campaign; at the conclusion of the campaign, almost a third had been returned. A second mail-out reminder package was instituted for this conference in order to maintain contact with the invitees in close proximity to the conference date. Two weeks before the conference, a package was send which included a promotional flyer, a working draft of the agenda, and a registration

form. The mail-out process and the telephone follow-up resulted in a confirmation list of 80 companies with a potential of 120 minority business representatives.

WESRAC personnel were kept abreast of the type of businessmen attending, so that they might tailor the Technology Utilization Workshops to the interests of the participants. Representatives from Sears, JPL, NASA, and IBM were firmly committed for the afternoon sessions.

Materials from both NASA and OMBE were chosen and forwarded to the site, and folders for the informational packet were designed and printed. Registration and Evaluation Materials were modified and prepared, equipment needs were determined, and clerical support was obtained.

After the site, agenda, and participants had been committed and confirmed, the contractor kept in steady contact with all sectors of the program to coordinate its staging. On April 29, 1975, InterAmerica established a conference headquarters at the WESRAC facilities at the University of Southern California. Materials were coordinated, luncheon arrangements finalized, agenda participants were given final instructions, and the Instructional Television Center was prepared for the conference.

### III. CONFERENCE

#### MINORITY BUSINESS PARTICIPATION

Thirty-seven (37) minority business firms registered for the conference, with a total of forty-nine (49) minority business representatives. Although this represents a significant (49%) drop from the confirmation list, the profiles of the companies which did attend indicate that they are a select group among minority businessmen. 88% of the companies had an annual sales volume of over \$100,000. Of these approximately 70% had sales volumes of between \$100,000 and \$500,000, and almost 30% had sales volumes over \$500,000. Less than 13% had sales volumes of less than \$100,000. In a select group of this kind, the potential for technology transfer is very high.

#### PROCEEDINGS

##### Conference Moderator - Mr. Harrison Allen, Jr.

Mr. Allen convened the seminar by introducing himself, welcoming the guests to the conference, and mentioning a brief outline of the day's activities. The purposes of this program, according to Mr. Allen, are to inform the minority businessman of how assistance is offered and how his company can benefit from NASA Technology, and to provide information on how to do business with NASA, through its subcontractors.

##### Welcoming of Participants to the University of Southern California - Mr. Jack Nilles

Mr. Nilles welcomed the participants to the USC facilities. The major point of his talk was the practical value of the technology transfer program. He stressed that the use of the technology transfer services

could produce such positive results as the reduction of costs and the improvement of profitability .

Welcoming of Participants to Conference -

Mr. Ray Romero

Mr. Romero began his presentation by presenting his views on the purpose of OMBE. He contended that OMBE's goal was to move minority business enterprises to a competitive level in the business world. He noted that OMBE is relatively helpless without the aid of major organizations such as those represented at this conference. He urged the participants to "take advantage of their presence here!"

Conference Purpose and Objective -

Mr. Ray Gilbert

Mr. Gilbert began by describing NASA's role in relation to the nation's economy and explaining the conception of this particular program. He indicated that the technology explosion of the 50's resulted in the accumulation of vast stores of technological information. NASA realized the need for the establishment of a method for the storage and retrieval of this technology and hence, the Industrial Applications Center System was born.

He explained that there would be four workshops: Chemical/Plastics, Electronics/Communications, Mechanical Design, and Pollution. Mr. Gilbert emphasized that this variety in the included topics would increase the possibility of benefits to the varied types of companies present. He introduced the resource personnel who would be manning the workshops.

After briefly outlining and explaining the agenda for the day, Mr. Gilbert addressed himself to the question, "Why this program?" He explained that the program targets on an important element of the American economy. There are between 325,000 - 400,000 minority businesses today; this represents only 4% of all businesses throughout the country. However, minorities constitute about 14.4% of the total population. These figures support Mr. Gilbert's contention that minorities have drastically failed to benefit from the technical evolution.

Mr. Gilbert concluded his presentation by stressing the problems which prejudice causes, and assured the participants of NASA's interest and commitment to the solution of these problems.

The Industrial Application Center System -  
Mr. Radford King

The focus of Mr. King's presentation was a description of the Industrial Application Centers program, with specific emphasis on the USC facility, WESRAC. He defined the WESRAC program as the use of an automated data base system with the function of finding clients existing information which can help in the solution of their problems. He mentioned that the WESRAC system has liason with JPL experts, to whom they can turn if a data bank on a particular topic does not exist. They also have access to the entire USC faculty.

Mr. King then described the two major division of WESRAC. The Data Systems section, which is headed by David Komoto, assists

clients in developing their own data bases, and there is also a full technical staff division.

The structure of the four technology utilization workshops was then outlined by Mr. King. The workshops would be held in the Instructional Television Center Classrooms so that the participants might review a sample search on the individual television screens. Tech briefs on various topics of interest would also be made available. Mr. King urged that an open communication between participants and staff should be established in the workshop sessions.

After giving an example of the problem-solving capabilities of WESRAC, Mr. King concluded his portion of the program by informing the participants that NASA would sponsor a free search for each participant on the topic of his choice.

### TECHNOLOGY UTILIZATION WORKSHOPS

Four workshops, Electronics/Communications, Mechanical Design, Chemical/Plastics, and Pollution were held concurrently. Participants were invited to attend the workshop of their choice for the first hour and a half, then were given the option of moving to another for the last half hour. The introductory portion of the workshop - an explanation of WESRAC services and a sample search - was presented by Mr. Herb Asbury, and broadcast simultaneously through the four workshops through the facilities of the Instructional Television Center.

#### Introduction - Mr. Herb Asbury

Mr. Asbury initiated the workshop session by giving a brief overview of WESRAC services. The basic purpose of the WESRAC search service is to produce information through the use of computer data banks which have access to over 72 information sources, including NASA. The WESRAC staff has access to information which indicates, for a chosen topic, where to look and how much information is available. The technician will discuss the client's need, establish the sources of data, and make a cost estimate. At this point, WESRAC identifies key words and concepts, groups these key words into a strategy and translates this into the language of the computer. Mr. Asbury concluded his presentation by demonstrating a sample search on the individualized television screens, then turned the workshops over to the technical personnel for each topic.

Workshop I - Chemical/Plastics

Moderators - Dr. Robert Mixer  
Mr. David Maloney

Dr. Mixer opened the workshop on Chemicals and Plastics by introducing himself and Mr. Maloney of WESRAC. He indicated that the presentation portion of the workshop would deal specifically with adhesives, a very pervasive area. Dr. Mixer explained the search request forms, and described the procedure flow chart which is followed in the production of a search. He then discussed the two basic types of searches: either a search based on a specific problem or a search on the State of the Art. Dr. Mixer then exhibited and explained part of a print-out dealing with adhesives.

Dr. Mixer reminded the participants that NASA's offer of a free search would cover any number of data bases required, then opened the floor to discussion. A participant asked how to formulate a question to the computer on the need for new products based on existing capabilities. It was explained that a profile must be done on the company covering its strengths and weaknesses, the plausibility of a new product, and the fitness of the product. It must be determined why the new product is needed, then citations on products related to the company's interest area can be considered. After this information is collected, it is relayed to the client through a consultant. This process is extremely complicated, and the client would have to contact other sources in addition to WESRAC.

In answer to a second question, it was indicated that WESRAC had



much information on high temperature bonding. When asked if WESRAC gathered primary marketing data, Dr. Mixer answered that they do not, but they do have secondary marketing information. For example, if asked to determine basic information on polyethylenes, WESRAC could provide information on the overall U.S. market, then distill the probable percentage of a specific marketing area. Dr. Mixer affirmed in answer to a question that WESRAC had information stored on Electro-Plating Techniques.

The discussion then turned to the topic of Tech Briefs; Dr. Mixer explained that it was possible to be placed on a mailing list to receive them, although he did not have specific information on the methods of distribution. He did note, as an aside, that any subject dealt with in a Tech Brief distributed at this conference would probably be a subject for which much information is stored.

Dr. Mixer, answering a question, explained that WESRAC did supply abstracts of information. When questioned on the advisability of putting in the search request as much of the problem as possible, Dr. Mixer replied that there was no clear answer to this; sometimes it was advisable, sometimes it would merely complicate the search.

The session ended with a question on whether WESRAC provided private counselling. Dr. Mixer said that they had certain capabilities for this, and if they could not be of assistance, they would direct the client to a knowledgeable source.

## Workshop II - Electronics/Communications

Moderators - Mr. Fernando Tolivar  
Mr. Gunther Redman  
Mr. John Wolcott

The moderators began the workshop by proceeding to examine two sample searches on electronics and communications to illustrate the opportunities in using already published Research and Development information to apply to an individual company. They noted that WESRAC has the capability of providing expert personnel, and that the marriage of JPL and WESRAC provided even more proficient counselling both before and after the search. They mentioned that the confidentiality of each client's problem would be protected.

Ray Gilbert, from the NASA Washington TU Office, reminded the audience that NASA would pay for one free search for each company in attendance.

John Wolcott then described the WESRAC search form and the WESRAC guide which is used to determine the parameters of a search. He indicated that WESRAC data sources include NASA, Industry, Government, Education, and foreign technology. He stated that the material is completely current, because if a Tech Brief is over a year old, JPL researchers have probably had some contact with the author of the tech brief and are privy to updates of his research. Mr. Wolcott then said that pricing is reasonable, and that WESRAC had access to the actual documents in the form of full documents, full text reports from publishers, and reproductions of texts. He defined WESRAC as a one stop shopping center for technology, management, marketing,

search capabilities, consultants, and documents.

Mr. Wolcott explained that a search request describes the general client problem to be discussed with the WESRAC personnel. It merely indicated an interest by the client to which WESRAC will respond by contacting the prospective client to determine the specifics on objectives, keywords, requirements, and cost. This entire process is done so that expectations will be clear.

Mr. Wolcott gave the normal turn-around time for a print out with citations as one week, and the time for a print out with abstracts as two weeks. Documents can be procured immediately on NASA microfiche; a Xerox of the document takes 2-3 days, an order from the government printing office takes 2-3 months.

The participants were told that after the free search, Ray Gilbert through NASA would provide financial assistance for product development.

The moderator concluded by telling the participants that searches could be initiated by mail, phone, or personal contact.

### Workshop III - Mechanical Design

Moderators - Mr. Herb Asbury  
Mr. Chuck Kubokawa

Mr. Asbury opened the Mechanical Design Workshop by explaining that the age of WESRAC data spans from about 48 hours old to several years. The sources utilized are worldwide and span the technical, humanities, educational and vocational training fields. The results of the searches can take the form of citations, abstracts, fiches , or paper copies.

Mr. Ray Gilbert added that the participants had one month from the conference date to take advantage of NASA's offer of one free search for each company in attendance.

Chuck Kubokawa from Ames Research Center at Moffett Field distributed Patent Tech Briefs and told the participants to contact the Technology Utilization Officer for additional information on specific items. He also advised the workshop attendees to utilize the Technology Resources Library at NASA and installations such as Ames Research Center and JPL.

A participant asked whether NASA would help in the building of a prototype. It was explained that NASA had financial resources for this purpose, and that a product did not have to be space applicable to take advantage of these funds. For example, the foam used in an airplane seat could be utilized in hospital chairs and beds to eliminate bed soars. The information can be applied in many possible ways.

This line of discussion continued with the question of whether NASA would fund only marketable items or would they also back the development of new machinery. The reply was that the primary criteria for funding were that it must involve NASA technology in some way and that it must involve a product and not a process.

A member of the workshop asked if there were controls to avoid duplicate end products. Mr. Kubokawa explained that there are exclusive right patents; other than that, there are no controls. When it was asked if minority businessmen would be treated with equity, Mr. Kubokawa replied that to get an exclusive use patent, it must be demonstrated that the firm's work will benefit the general public.

Mr. Kubokawa informed the participants that NASA holds many patents on work done by contractors and that these are available to the general public. NASA paid for the development of this information, so the general public has a right to make use of the technology.

Mr. Kubokawa concluded this workshop by advising the minority businessmen to try sub-contracting to the primary developers.

#### Workshop IV - Pollution

Moderator - Mr. Radford King  
Mr. David Komoto

Mr. Radford King introduced the workshop session by stressing the need for communication between WESRAC and its potential clients. He went on to explain that there were two kinds of searches: one giving a general, broad, overview and the other addressing itself to very specific points.

The advantages of a computerized search, according to Mr. King, lie in its cost effectiveness. A computer can produce a sound strategy, quickly indicate if there is nothing available on a particular topic, and avoid overlapping materials. In other words, the major advantage of a computerized search is that it avoids "re-inventing the wheel", according to Mr. King.

Mr. King then demonstrated a sample output, explaining the meaning of citations and abstracts and indicating that pricing is based on the extent of information being supplied.

A participant asked if abstracts are supplied as a matter of course. Mr. King answered that if abstracts don't appear on the print out, WESRAC can supply them. He noted that the available information is international in scope.

A businessman asked about the current status of liquid methane. Mr. King responded that he could not answer that question on the spot, but that it was a good example of a productive search request.

Mr. King then discussed Standard Interest Profiles, which are running records of all the available information produced on specific

subjects.

A participant asked about Geo-Thermal information, and Mr. King explained that WESRAC is currently involved in work in that field.

Mr. King then introduced Mr. David Komoto, a technical specialist from WESRAC, who spoke on Tech Briefs. He explained that Tech Briefs are available through WESRAC's document retrieval service, and that WESRAC can refer the client to the person responsible for the brief. He also mentioned that WESRAC can supply consultant services.

Mr. Komoto then opened the workshop to questions. The first questioner asked how long it takes to complete a search, and the moderator replied that a print out can be produced in 48 hours. He then described the procedure used in performing a search, indicating that there is a variable price structure. Mr. Ray Gilbert reminded participants of NASA's free offer of a search and company profile to all those in attendance. He stressed that if the minority businessman acquires NASA technology, NASA will assist the minority businessman financially.

A participant asked if the client must do extensive market research before instituting a search. The moderator replied that this was not always necessary, as WESRAC can do the essential market research by tapping its data bases and identifying potential areas of diversification for the client.

The moderator stressed that the basic need in the search is for

the client and WESRAC to cogently define the product.

A participant posed two questions for searches in marketing:

"If I have X Technology, what can I do with it?"

"If I have X Technology, and can make Y what can I do with it?"

The moderator answered that although WESRAC is capable of providing information on diversification opportunities and new products, they are not able to make the final decision; they function in a consulting capacity. Once the firm chooses a probable course of operation, WESRAC can assist them by providing research and work in the desired field.

When asked whether WESRAC could pinpoint the number of people working in a particular field, the moderator replied that this could be accomplished; however, it entailed a manual rather than an automated search.

Several participants asked questions on whether information was available for particular fields.

The moderator then concluded the program by stressing that NASA is a very good data bank.



### Luncheon Presentation - Mr. Hosea Alexander

Mr. Harrison Allen, Jr. introduced Mr. Hosea Alexander to deliver the luncheon presentation, "NASA Technology and the Martin Luther King, Jr. Hospital."

Mr. Alexander began by addressing the conferees on the problems of minority businesses receiving support from organizations such as NASA. He explained that this kind of support is short term, providing the impetus necessary to get a business on its feet. It produces a quick pay-off to stimulate activity and interest, but it is imperative for the businessman to realize that the real goal is self-support; NASA can't support a business indefinitely. The purpose of programs such as these should be viewed as involving three steps: technology transfer realized through outside support resulting in self-sufficiency.

Mr. Alexander then delved into the particular problems of service industries. He stressed that personality enters into all service relationships; that the businessman must sell his ideas by convincing the buyer of every possible benefit. The only way to sell a service is by personally convincing the public that it is necessary.

Mr. Alexander illustrated and expanded upon his essential points by offering his own experience as an example. Mr. Alexander was involved in a Technology Transfer Program between JPL and the Martin Luther King, Jr. Hospital. His task was to develop a plan, using JPL systems, to predict 5 years of growth, order appropriate

equipment, and to establish communication between departments to develop an integrated and productive system.

The first and most important task, according to Mr. Alexander was to develop a workable plan, inclusive of all available data on the hospital. This involved an analysis of the physical plant, the admitting system procedure, the problem of coordinating the needs of the entire hospital staff and developing open in-house communication lines, integrating personnel, equipment, and patient load distribution, and improving identification with the community.

Mr. Alexander stated that in coordinating these varied areas, NASA-JPL information systems programmers were extremely helpful. After he had determined the need plan, the information system produced a blueprint which could be used by the hospital staff to efficiently and smoothly coordinate the use of the various resources available. Existing personnel and equipment were utilized more productively, and future needs were clearly defined.

In fact, Mr. Alexander's plan for the Martin Luther King, Jr. Hospital was so successful that similar plans are being used to estimate demands for health services throughout LA, and health districts have been able to ask for increased budgets.

Mr. Alexander concluded his presentation by indicating that the floor was open to questions.

When asked if he had done any preliminary computer search, Mr. Alexander replied that he had used the facilities at UCLA and Blue Cross. A minority businessmen asked if they had developed any data which would enable them to compete with giant laboratories such as Upjohn. Mr. Alexander replied that this was one of the motivating factors behind the establishment of King Hospital - the creation of new opportunities for the local, small business population. He agreed that Los Angeles City's procurement plan was not conducive to the needs of small businessmen. He concluded by urging the minority businessmen to use political pressure to initiate changes in this kind of policy.

## Commercializing Technology Workshops

### Workshop I - NASA/JPL

Moderators - Mr. Deven Biggs - NASA Small Business Specialist  
Mr. Walter Anderson - Small Business and Minority  
Business Programs Administrator - JPL

Mr. Walter Anderson introduced the participants to the functions and services of JPL. He explained that 35-40% of outside procurement at JPL is channelled to small businesses. JPL publishes a minority business directory which is restricted to companies in the Los Angeles area. This directory is sent to large firms prior to procurement dates so that they can peruse it at their leisure. The directory describes the capabilities of each company so that qualified firms will be contacted for bids on production. In order to be listed, the minority business is surveyed in person by a JPL/NASA Pasadena representative. This survey will not be published without approval by the business in question.

Mr. Anderson explained that the directory has been published three times, and that results have been positive. The first issue was distributed to 150 companies and resulted in \$14 million in sales. By the third issue, 800 companies were receiving the listing and \$20 million in sales resulted.

A participant raised the point that many minority businesses could qualify for a grant or contract on the basis of their capabilities if they first received the grant. For example, a painting contractor may not have any business but if he wins a contract, he can hire free lance painters as needed. If he is first judged on his apparent capabilities, he will not be able to prove his capabilities.

Another participant mentioned that bondability is needed in construction work. A contractor will automatically be discounted from consideration if he cannot be bonded up to the value of the construction.

Mr. Harrison Allen from the NASA Lewis Research Center explained that there is a Minority Business Council set up at each NASA field center. He also noted that all NASA contracts for over \$10 thousand are required to be published in Commerce Business Daily. DCASR at 11199 La Cienega Blvd. in Los Angeles has a listing of every job sought through NASA procurement across the country no matter how large or small the bid.

A workshop member mentioned that if a minority businessman fails to respond to a request for a bid three times, then he is automatically removed from the list for procurement.

It was also brought out that there is no percentage or monetary quota on minority business contracting at the NASA Field Centers. Each center is encouraged to set their own standard. There is a contract compliance clause that 20% of a contract appropriation must go to minority subcontractors.

The response from the audience to this statement was that there is no enforcement from HUD for these clauses. Mr. Anderson replied that NASA has in-house enforcement; they send their own inspectors to monitor activities.

Mr. Anderson concluded the formal workshop presentation and made himself available for discussion.

Workshop II - IBM

Moderators - Mr. Hal Calkins - Senior Buyer, IBM, San Jose  
Mr. Art Glockner - Manager, Purchasing, IBM, San Jose

Mr. Glockner began by describing IBM's minority supplier program. He informed the audience that IBM had an active internal affirmative action program, attempting to upgrade minorities into the full stream of management and engineers. Externally, they involve themselves in a viable minority supplier program. IBM's offices are encouraged to utilize a good percentage of minority suppliers. Mr. Glockner explained that the top levels of IBM are committed to the minority supplier program and that the buyer has the responsibility of implementing the program. This corporate program requires local reports on the number of minority suppliers used, the volume of business, and the number of new suppliers.

Mr. Glockner continued by informing his audience that there is a minority supplier coordinator at all major purchasing locations who identifies goals and objectives. Minority entrepreneurs can become suppliers to IBM in one of two ways: 1 - the minority businessman can identify himself; or 2- IBM runs searches for specific types of suppliers. Mr. Glockner urged the participants to actively "sell themselves" and their capabilities.

He then explained that a minority supplier could deal with IBM's national market in addition to its local branches. All local suppliers are identified and reported to corporate headquarters. IBM will purchase both commodities and services from minority suppliers.

Mr. Glockner enumerated the criteria used for judging a potential supplier: price, delivery, and quality. He explained that IBM will

survey a potential supplier for manufacturing capabilities and performance of qualify inspection, then quote the supplier the figures on jobs that match his capabilities. Contracts are then awarded strictly on price.

Mr. Glockner advised interested businessmen to contact the buyer, make an appointment, bring a facility list, and follow up on the contact. He concluded by soliciting questions.

A participant asked if his company had previously been approved by one IBM location should he supply facility lists to other IBM offices, to which Mr. Glockner replied in the affirmative.

In answer to another question, Mr. Glockner indicated that IBM defined a minority business as an enterprise 50.1% owned by a minority.

When a businessman asked how to get in touch with buyers at other locations, Mr. Glockner requested his business card. Another businessman asked for the name of someone to contact when a product could be used at more than one plant, and Mr. Glockner told him to contact the corporate minority supplier coordinator.

A participant asked if IBM gives technical assistance to suppliers in order to help them improve their products. Mr. Glockner replied that this was not the normal policy, but if IBM makes a further requirement for a chosen supplier, they send experts to help and supervise. On the same topic, a participant asked if there was room for variations from IBM specifications, and Mr. Glockner assured him that there was.

The workshop ended with a question by a businessman asking if he had once been refused by IBM, should he try again. Mr. Glockner replied that he should feel free to call again, and urged all participants to sell themselves and their capabilities.

Workshop III- Rockwell/Sears

Rockwell Moderators - Mr. Sy Gottlieb - Corporate Manager, Small  
And Minority Business Administration,  
Rockwell International  
Mr. Dan Sword - Space Ventures MESBIC  
Mr. Bud Goldstone - Project Administrator,  
Technology Utilization, Rockwell  
International

Mr. Bud Goldstone's presentation on Rockwell International began with a film called "Space", which described Rockwell's Space Shuttle, a reusable Space Transportation System which is in production for use in 1980 to discover new sources of energy. The main thrust of the film was that technology growth will result in an increase in the gross national product, employment and world trade.

Mr. Dan Sword continued the Rockwell Presentation by discussing his company, "Space Ventures", a MESBIC formed under the Small Business Investment Act. Rockwell provided one million dollars to finance this MESBIC; with two basic criteria being used for judgement: 1 - it was a viable firm with proof of experience; and 2- it was involved in a technology related area.

Mr. Sword explained that any business desiring this type of support must put together a loan package proposal. Since January of 1975, Rockwell has considered approximately 50 of these proposals.

Mr. Sy Gottlieb concluded the Rockwell Presentation by informing the participants that in 1971, Rockwell was doing less than \$1 million worth of business with minority businessmen; by 1974, this figure had risen to over \$9 million.



Sears Moderators - Mr. Neil Piket - Coordinator of Minority  
Economic Development, Sears  
Mr. Robert Shibley - Department Manager,  
Pacific Coast Laboratories

Mr. Neil Piket introduced the Sears presentation by relating a brief background sketch on Sears' history. He then informed the minority businessmen that Sears was interested in procuring retail products only, and he gave them the names of persons to contact with minority proposals. The criteria used by Sears to judge a potential product are:

- Will it sell?
- Will it last?
- Is it safe?
- Can you produce quantity?
- Can you ship on schedule?

Mr. Piket explained that Sears is interested in technology transfer because they are always concerned with making a better product.

He then introduced Bob Shibley of Sears' Pacific Coast Laboratory who related a short history of Sears' laboratories. Mr. Shibley stressed that the labs consider products in terms of cost, aesthetics and function. He concluded the formal presentation by opening the floor for discussion.

The first question asked was whether they had any specific dollar figures on Sears' expenses in minority enterprise development. They had no figures. It was then asked if they could test a hydraulic jack; they replied that this kind of testing is done in the Chicago offices. The workshop concluded with a question asking if Sears had a West Coast Buyer, to which the moderators responded in the affirmative.

Question and Answer Period - Mr. Ray Gilbert, Moderator

A question and answer period was conducted at the conclusion of the conference to offer the participants an opportunity to discuss and question the events of the day. Mr. Ray Gilbert moderated the session, and began by reminding the participants of NASA's offer of one free search and their promise of financial assistance to any minority businessman who develops and packages a prototype using NASA Technology.

Mr. Gilbert then asked the participants if they had found the procurement sessions in the afternoon useful. It was generally agreed that the procurement sessions had been basically unproductive and that some of the private sector industry representatives who moderated the workshops were not adequately prepared to deal with the problems of minority businessmen. When Mr. Gilbert asked for ideas on how to raise attendance, it was suggested that emphasis should be placed on the government as the largest buyer. Other participants suggested a broadening of the criteria for invitees, and the use of additional mailing lists.

Most participants agreed that the mail-out package followed by the personal phone call was the basis for their attendance.

In response to questioning from a participant, Mr. Gilbert explained that contract related searches would be free, and that requests can cover many varied areas.

Several participants mentioned their growing skepticism of

government programs. A businessman asked about the chances of getting a government contract through a proposal. Mr. Hosea Alexander told him that he should be aware that only 3% of all bids are awarded to businesses who merely respond to a request for a bid and have had no previous contact with the contracting firm. He advised that success results from unannounced visits to firms that have a potential for interest in your product.

Mr. Gilbert adjourned the conference by directing the participants to the hospitality hour.

#### IV. EVALUATION

##### Evaluation Questionnaire - Summary of Results

The following is a summary of the responses received from the evaluation questionnaire distributed at the Technology Utilization Conference held on May 3, 1975 in Los Angeles.

In regards to pre-conference activities, 100% of those who responded to the question indicated that they found the invitation to be clear. 92% thought that the information concerning the program was sufficient, 64% that the transportation information was sufficient, and approximately 90% found that both lodging and directional information was sufficient.

Only two participants commented that advance notice was too short, none found it too long, the bulk of the respondents found it sufficient. 73% of the respondents found the telephone invitation follow up helpful.

The location of the conference was designated as convenient by 100% of those who responded to the question and the choice of a Saturday for the day of the conference was considered convenient by 94% of the participants 100% of the respondents found the conference facilities to be good.

The Technology Utilization Workshop sessions were well-received, 100% of those who responded found both the Workshop Leader and the Workshop Personnel knowledgeable and helpful, and 93% found the presentation clear. Workshop materials were rated relevant by 90% of the participants and 69% thought that coverage of the materials was sufficient. Half of the

participants rated the workshops excellent, the other half considered them good.

The reaction to the marketing workshops was also generally quite positive. Workshop personnel were judged helpful by 100% of the respondents, and workshop presentations were considered relevant by 100% of the respondents. 93% thought that questions were answered easily. 53% rated the workshop excellent, while the remaining 47% found it to be good.

The Question and Answer period was considered beneficial by 90% of the participants; 20% found it too long, the rest found it neither too long nor too short.

50% of the companies represented had previous contact with both OMBE funded organizations and the NASA TV program.

The luncheon program was rated excellent by 21% of those who responded and good by 79%.

When asked which sections of the program should be expanded, the response was as follows:

- Conference Purpose and Objective 4 (27%)
- The Regional Dissemination Center System 2 (13%)
- Technology Utilization Workshops 7 (47%)
- Commercializing Technology Workshops 6 (40%)
- Technical Panel, Question and Answer Period 1 (7%)

Some additional comments from the participants:

"This is the first government sponsored conference I've attended to its conclusion. We will follow up to determine whether the program has any real promise to us...or whether, as most others, it falls flat when it comes down to the positive conversion beyond the canned presentations of promising words."

"Could use better examples of final output data, i.e. more examples of WESRAC."

"...I feel the program should be continued on a larger scale. It should be condensed leaving out long question and answer periods and fill in spots and just keep the meat and potatoes."

"Would like to attend next workshop."

"Conference facilities - very good."

"Program movement fine, fluid and impressive. Private sector is the drawing card. People don't understand the impact of what they were told, need to breakdown to success stories. Much of the information seemed to be over people's heads."

Fifteen evaluation questionnaires completed by minority business  
representatives  
May 3, 1975 Los Angeles

TECHNOLOGY UTILIZATION CONFERENCE  
May 3, 1975  
Evaluation Questionnaire

NAME OF COMPANY: \_\_\_\_\_

1. Invitation Clarity:	Good	<u>15</u>	Poor	<u>      </u>
2. Invitation Information: Program:	Sufficient	<u>11</u>	Should Have More	<u>1</u>
Transportation:	Sufficient	<u>7</u>	Should Have More	<u>4</u>
Lodging:	Sufficient	<u>8</u>	Should Have More	<u>1</u>
Directions:	Sufficient	<u>12</u>	Should Have More	<u>2</u>
3. Advance Notice:	Too Short	<u>2</u>	Too Long	<u>0</u>
4. Telephone Invitation Follow Up:	Helpful	<u>8</u>	Unnecessary	<u>3</u>
5. Conference Location:	Convenient	<u>14</u>	Inconvenient	<u>0</u>
6. Saturday Conference:	Convenient	<u>14</u>	Inconvenient	<u>1</u>
7. Conference Facilities:	Good	<u>15</u>	Poor	<u>0</u>

8. Please circle Technology Utilization Workshop attended:

1. Chemical/Plastics <u>2</u>	3. Mechanical Design <u>9</u>
2. Electronics <u>4</u>	4. Pollution <u>4</u>

a. Workshop Leader:	Knowledgeable	<u>14</u>	Uninformed	<u>      </u>
b. Workshop T. U. Personnel:	Helpful	<u>14</u>	Unnecessary	<u>      </u>
c. Workshop Presentation:	Clear	<u>13</u>	Unclear	<u>1</u>
d. Workshop Materials:	Relevant	<u>10</u>	Irrelevant	<u>1</u>
e. Workshop Materials Coverage:	Sufficient	<u>13</u>	Not enough	<u>4</u>
f. Workshop Rating:	Excellent	<u>7</u>		
	Good	<u>7</u>		
	Poor	<u>      </u>		

### Evaluation Questionnaire - Conclusions

The responses to the evaluation questionnaire in conjunction with several other factors noted at the conference provide the necessary data for critiquing the program content and its management.

The final attendance list comprised 37 minority business firms, with a total of 49 minority business representatives in attendance. This represents a drop of approximately 49% from the confirmations received for the conference. The fact that the date originally agreed upon for the conference was altered by NASA caused this conference to occur on a weekend which included two other minority business conferences in the region, and the Cinco de Mayo celebration. It was also learned during discussions with a board member of the Black Businessmen's Association of Los Angeles that the NASA-JPL procurement officer, Mr. Walter Anderson, was in very poor standing with the Black community and as such, the conference would not be supported or attended. During the conference it was openly stated that a letter had been circulated to this effect. Several participants were observed leaving in the afternoon in order to see the Kentucky Derby, and it is possible that the Derby prevented some participants from attending. These factors undoubtedly effected the attendance rate. In addition, although most participants who responded to the evaluation questionnaire indicated that invitational information was clear and received sufficiently in advance, it would seem that some changes in both structure and content of the mail-out process might increase the ratio of attendees to confirmations.



The content of the program was generally well-received, with the vast majority of respondents indicating that information was clearly and easily explained. However, a definite interest in the expansion of the workshop sections in contradistinction to the presentations was indicated in both responses and comments. Approximately 45% of the respondents indicated an interest in the expansion of workshops, while the other sections of the program received far fewer such responses. (Conference Purpose and Objective - 27%; The Regional Dissemination Center System - 13%, Question and Answer Period - 7%). Another factor to be considered here is that only 15 evaluation forms were completed out of a possible 48, which indicates that most of the participants had either departed or lost interest by the conclusion of the program. These factors in total suggest a concentration on the "meat" of the program with a play down of the filler.

The lunch program was considered good (79%) , but not excellent by most of the participants. A change in this area of the agenda seems to be indicated.

In general, the reaction of the participants to the program was positive, with most responses and comments indicating high degrees of interest in workshops, more interaction with Technology Utilization Resource Personnel, and fewer presentations.

V. CONTRACTOR'S OBSERVATIONS

It again appeared that many of the agency resource people did not participate actively in the scheduled events of the program. The quality of the workshops would be substantially increased by the presence of more resource personnel. Most participants expressed interest in more one-to-one interaction with resource people; the possibilities for this would be substantially increased if the agency participants attended the workshops.

It was observed in the report of the College Park program that a significant amount of antagonism was presented by the audience toward the "procurement" representatives on the agenda. Basically, the same type of antagonism arose at the Los Angeles Conference. Businessmen who had previously experienced problems and frustrations in their marketing efforts brought their frustrations and unloaded them on the procurement representatives at the conference.

In the opinion of the contractor, the net result of the procurement sessions, laced with antagonism, was a dilution of an otherwise successful technology utilization program. The thrust of this program is transfer of NASA Technology, not defense of NASA's or anyone else's procurement history.

A twenty percent (20%) sampling of the minority businessmen who confirmed that they would attend and then did not, produced the following reasons for non-attendance.

- Business emergency, went out of town
- Business conference in office, negotiating a contract

- Out of town on business
- Six day work week, couldn't take off
- Wife hospitalized
- Businessman broke his hand
- Went to SBA seminar at Biltmore, Saturday and Sunday
- Wedding in the family
- Too far, couldn't get transportation

Four out of the ten persons contacted gave business reasons for non-attendance. This is the single most competitive factor to the recruitment of large numbers of minority businessmen. Most shops are too small to do without the top man; therefore, they don't have the flexibility to take a working day off.

Two respondents indicated health reasons for non-attendance. This is a legitimate reason and an uncontrollable factor in the recruitment process. One person indicated that he attended a competing federal government sponsored conference. If this sample is representative of the population from which it was drawn, at least five of the no-shows were at the SBA conference. Additionally, if the same proportional relationships held for the sixty firms which declined our invitation, six declined because they went to the SBA conference.

The final two respondents indicated a family activity and transportation problems, respectively, as reasons for non-attendance. From the perspective of recruitment, these responses appear to indicate a lack of motivation to attend the conference.

## VI. CONTRACTOR'S RECOMMENDATIONS

### 1. Minority business representative identification and selection.

It is recommended that the criteria for selection of potential attendees should not be altered. Although the attendance at the first two conferences was not as high as expected, the objective of actual technology transfers will not be enhanced through an increase in the number of attendees, if the additional attendees are in service and related industries with no or little probability of technology use. To the contrary, a significant increase in dissatisfaction with the program is expected due to the mismatch of needs and a misinterpretation of what the conference would do for everyone. Recognizing that it is difficult to identify and recruit all manufacturers in any given area, the vast majority are being reached, invited and confirmed but it has not been totally resolved why they are not attending in large numbers.

### 2. Recruitment

Although a full 120 business representatives confirmed their intention to attend the conference, the attendance was less than 50% of this number. It is recommended that the direct mail campaign be expanded to a three mailings process with emphasis on NASA, and a commercial marketing approach taken in the literature. It is also recommended that prepayment of the registration fee be required. The three stages would be as follows:

1. NASA promo letter
2. Program and registration information
3. Reminder

Additionally, the telephone follow-up will be continued as it has been well-received with confirmations resulting.

Minority mass media advertising is being considered but the criteria for the audience selection relative to the conference objective raises some concern in this area.

3. Program Content (See Attached Recommended Agenda)

Substantial criticism was leveled at the introductory of the program. The audience indicated that generally it was too long and unnecessary to have so many presentations. It is recommended that this portion of the program be eliminated.

The technology utilization workshops were well-received, as they were in Houston, and they were highly rated. The basic criticism was that the presentations may have been over the heads of most people present. It is recommended that the presentations be simplified emphasizing the "success story" approach and that the entire program focus on the offered search.

The lunch and facilities were given a very favorable review by the participants, but the speaker was characterized as good but not to the point. It is recommended that the lunch period be shortened to one hour and no speaker be used. The lunch can then be focused upon the personal interaction of the resource people with the minority businessmen.

It is recommended that the entire private sector afternoon session

of the program be replaced by a one hour resource personnel availability period, during which questions can be answered and information exchanges can take place. This change eliminates the dilution of the Technology Utilization program by the antagonism the audience has heretofore expressed toward the individual companies. Additionally, this move strengthens the control of program content and continuity.

C-2

PROPOSED AGENDA  
BOSTON TECHNOLOGY UTILIZATION CONFERENCE  
July, 1975

9:30 - 10:00	Registration
10:00 - 10:15	Introduction of the IAC System, Presentation of what it is, Scope of information available, Information retrieval process and cost to users.
10:15 -- 2:00	Technology Utilization Workshops Each workshop leader will present in detail the IAC services and the mechanics of the retrieval process. An actual search will be run to demonstrate the process. Technical literature will be given out and each participant will be assisted with questions relating to individual search requests.
12:00 - 1:00	Informal Lunch to allow for social interaction of audience with resource people.
1:00 - 2:00	Resource availability period. All technical people will be available for questions and to render assistance.
2:00	Program Conclusion

### APPENDIX III

Boston Technology Utilization Conference

Held July 1, 1975

Sheraton Boston Hotel



## TABLE OF CONTENTS

I.	PREFACE.....	1
II.	PREPARATION.....	2
	A. Agenda.....	2
	B. Site.....	2
	C. Recruiting Minority Businessmen.....	3
	D. Formal Invitation.....	3
	E. Agenda Participants.....	4
	F. Follow Up and Final Preparations.....	6
III.	CONFERENCE.....	7
	A. Attendance and Profile of Attendees.....	7
	B. Reasons for non-attendance.....	8
	C. Proceedings.....	9
	1. Orientation and Introduction.....	9
	2. NASA Technology/Commercialization.....	11
	3. Electronics Workshop.....	14
	4. Mechanical Design Workshop.....	18
	5. Energy/Pollution/Materials Workshop.....	20
IV.	EVALUATION.....	25
V.	CONTRACTOR'S EVALUATION AND COMMENTS.....	31

I.     PREFACE

The Boston Technology Utilization Conference held July 1, 1975 at the Sheraton Boston Hotel incorporated a number of alterations designed to improve the promotion, logistics and program format of the conference.

The promotional aspects of the mail-out were stressed and highlighted; the on-site logistics were simplified to promote transitional ease; and the program format was concentrated and compacted to stress the basic purpose and eliminate confusing and non-essential elements.

The turn-out for this conference was quite respectable relative to the minority business population in the Boston area. The attendees were positively motivated to attend the conference and came prepared to work with NASA on their technical interests.

Although several operational problems arose in the preparation and execution of the program due to difficulties in coordination with the New England Research Application Center (NERAC), the end result was generally quite successful.

The results achieved through the adoption of these changes was a closer correlation of the program to the size and composition of the minority business community being addressed.

## II. PREPARATION

The pre-conference preparation stage of the Boston conference included several changes made to improve the conference. Although the basic tasks--developing an agenda, selection of site and key contact people, recruitment, logistical development, and follow-up and preparation--were essentially the same, a number of alterations suggested by the previous conferences were implemented.

The format for the agenda was shortened and compacted to direct the focus of the conference to the technology utilization workshops. It was decided to dispense with procurement sessions, as their main effect at both the Houston and Los Angeles conferences was to provoke the hostility of the participants and misdirect their attention from the real purpose of the conference. The agency speakers were also cut from the conference in order to concentrate the attention and interest of the audience on technology utilization.

The workshop sessions were expanded and divided into a modular system so that a participant would have the option of attending any three hour-long workshop sessions of his choice. Thus, the program was compacted into a half day conference, with a very short orientation session, followed directly by an intensive concentration on the workshops, and more time allowed for personal interaction.

A private hotel facility was chosen as the site for this conference because it was determined that the Federal Buildings in Boston would be neither usable nor appropriate for this conference. Three hotels were contacted as possible sites, and the Sheraton Boston was

chosen on the basis of superior facilities, better price, and availability. The contractor made his site visit and arranged for logistical considerations; other hotels in the area were considered and contacted as locations for possible lodging.

The recruiting effort for the Boston Conference involved several stages. The Office of Minority Business Enterprise representative in Boston was contacted to provide a listing of minority businesses in the area who would be interested in this program. Only 27 companies from the listing he sent had the requisite technical interests to be invited to the program; this would have resulted in a turnout of only ten to fifteen companies. The President of the Black Corporation Presidents of New England was contacted to determine if he knew of any additional companies in the area. He indicated that he would provide a listing of over 70 companies and asserted that 75% of these companies would attend. The Black Corporation Presidents of New England listing included 71 companies; however, less the overlap with the OMBE listing and companies located too great a distance from Boston, the list comprised 58 companies. With the addition of suggestions made by Minority Enterprise Small Business Investment Companies (MESBICs) in the area and the Maritime Administration (MarAd) minority business office, the entire mailing list included 86 companies.

The invitational process was altered for the Boston conference for the purpose of improving the promotional quality of the mail-out. It was decided that all stationary would be NASA (National Aeronautics and Space Administration) as the NASA name is readily identifiable,

prestigious, and memorable. The mail-out process itself was divided into three stages. The first correspondence included only a promotional invitation letter "teaser" and a flyer explaining NASA's Technology Utilization Program, making the first contact with invitees a short, easily absorbed and remembered package. The second mail-out contained more detailed and specific follow-up information: an agenda, a logistical information sheet, a flyer describing events and opportunities, and a short letter which was to be returned in a stamped, self-addressed envelope to confirm or decline the invitation. The final mail-out was a reminder letter sent to confirmees reminding them that they had reserved a place at the conference and requesting them to contact conference personnel if they would not be able to attend.

In addition to the mail-out, a personal follow-up call was placed to each of the invitees to explain the program, answer questions, and reserve places.

Forty-five companies confirmed that they would send a representative to the conference; seventeen said that they would not be able to attend. Fifteen of the companies on the mailing list were no longer listed in the telephone book; and nine companies could not be reached by phone and were not heard from by mail. The confirmation letters were returned by 22 of the firms.

The contractor encountered two areas of difficulty in the preparation for the Boston conference: the confirmation of agenda participants and the organization of materials. These two problem areas are both related to a lack of cooperation shown by NERAC. The

contractor, during the course of the site visit to Boston to finalize and confirm arrangements discovered that NERAC had not begun preparation. It was explained to the contractor by the director of NERAC that no preparation would take place until contractual negotiations were completed with NASA. The contractor then contacted NASA and was told that an official letter had been sent which would correct the situation. The NERAC director later informed the contractor that he had received the letter, but gave no comment.

The NERAC Director's office was contacted approximately 3 1/2 weeks before the conference date to discuss the type of technical materials which the Industrial Applications Centers provide to supplement their presentations. At that time, the contractor was informed that no work would be done on these conference until NERAC's contractual negotiations with NASA were completed. Several days later, after NERAC had been contacted by NASA for the purpose of solving this problem, the NERAC Director's office called, discussed the type of materials used at past conferences, and agreed to provide them for the Boston conference. Approximately a week and a half before the conference date, the contractor again contacted NERAC to check and verify that all materials had been sent. At that time, the contractor was told that no work would be done for this conference until June 26 when the NERAC contract with NASA would be finalized. This would obviously be too late for the ordering of any materials, so it was necessary for the contractor, in conjunction with NASA's Technical and Information facility, to conduct a search on the presented topics and transport all relevant materials to the conference.

In regards to confirmation of agenda participants and listings of resource personnel, the fact that no work would be done on this conference until one week, at most, before the conference date, made it quite difficult to confirm and properly brief agenda personnel.

Other agenda participants and resource personnel were kept abreast of conference activities. It was decided, because of the more "low key" nature of the program and the smaller audience, that the NASA display would not be shipped to Boston. As a replacement, the contractor had posters designed and made which would be placed in each of the session rooms and at the entrance to the conference.

Final arrangements were made with hotel personnel for equipment needs and clerical support. On June 30, a Conference Center was established at the Sheraton Boston, and final checks were made. All materials were coordinated, logistical arrangements were made, and the conference area of the Sheraton Boston was prepared for the conference.

### III. CONFERENCE

#### Attendance and Profile of Attendees

The Boston conference was attended by twenty-seven minority business representatives. Although this represents a drop of approximately 40% from the confirmation list, it should be remembered that the original prediction for turn-out in the Boston area was between ten and fifteen companies. Thus, the recruiting effort for the Boston conference can be considered largely successful, drawing nearly 200% of the original attendance prediction.

The minority business enterprises which sent representatives to the conference were firms involved in a number of technologically oriented fields. One third of the participants were involved in electronics, another third in machine parts and tooling, with the remaining companies in computers, architecture, metal fabrication, and the bio-medical field.

The annual sales volumes of the companies in attendance ranged from \$500,000 or more for 27% of the firms, to under \$50,000 in 35% of the firms. These two groupings had the heaviest numerical concentrations, with the remaining companies divided as follows: \$50,000 to \$100,000 - 8%; \$100,000 to \$250,000 - 11%; \$250,000 to \$500,000 - 19%. Another way of viewing the findings is that 58% had sales volumes of over \$100,000, while 42% were under \$100,000.



### Reasons for Non-Attendance

A sampling of the companies which confirmed but did not attend the conference was taken to determine their reasons for non-attendance. Five companies were contacted, which represents a sampling of over 25% of the drop-outs.

Of those surveyed, three gave business reasons for non-attendance. If this figure holds for the entire group of non-attendees, this would indicate that 60% or approximately eleven out of the eighteen drop-outs did not attend for business reasons. In the minority small business population, this is a predictable and valid reason for non-attendance. Immediate crises and operational difficulties often make it impossible for a small businessman to take time off.

One of the businessmen from the sample population indicated illness for non-attendance. This again is a valid reason and an uncontrollable factor in the process.

The remaining businessman surveyed indicated that he had forgotten the conference. He affirmed that he had received a reminder mail-out two working days before the conference; however, he nevertheless forgot to attend. This implies a lack of motivation and a perception of the conference as an unimportant event. If this holds for the general population, 20% or four of the businessmen should have been more strongly and personally motivated to attend.

In summary, the results of the sampling indicate that 80% of the non-attendees contacted did not attend for valid or uncontrollable reasons, while 20% were not sufficiently motivated.

PROCEEDINGS

The conference was opened by a brief orientation and introduction to conference activities by Mr. Ray Gilbert, Chief of Special Projects of the N A S A Technology Utilization Office in Washington, D. C.

Orientation and Introduction - Mr. Ray Gilbert

Mr. Gilbert introduced his presentation by explaining that the purpose of this conference was to introduce and expand minority business development through the use of technology transfer. This conference provided the minority businessmen with the valuable opportunity of interacting with representatives from the Industrial Applications Center.

Mr. Gilbert continued by briefly describing the structure of the conference, explaining that the workshops would be broken down into three sessions at which the participants would be informed about the various types of services which the Industrial Applications Centers provide. The IAC personnel at this conference were from NERAC, which is located at the University of Connecticut.

Mr. Gilbert reminded the participants that NASA was providing one free data search through the services of NERAC for each company in attendance. He emphasized that the search must be initiated within thirty days after the conference date.

Mr. Gilbert then introduced Mr. Ted Lettes, National Coordinator of Technology Utilization for OMBE, which is a co-sponsor for this program.

Mr. Gilbert continued by reminding the participants of the importance of completing the evaluation questionnaires in their hand-out packets and of turning them in before leaving.

He resumed his introductions by presenting Mr. Rex Snodgrass and the staff of NERAC; he explained that the personnel from NERAC would be of great technical assistance to the minority businessmen. He also indicated a representative of the National Association of Black Businessmen who was in the audience.

In continuing his discussion of the Industrial Applications Centers, Mr. Gilbert explained that there were seven such centers throughout the country. The two centers of particular interest to the attending businessmen are located in Pittsburgh and Connecticut.

Mr. Gilbert then stressed the importance of minority business involvement in advanced technology. Most minority businesses are in service industries; they must become involved in the mainstream of American industry.

Mr. Gilbert concluded his portion of the program by introducing the next speaker, Mr. Chuck Kubokawa, a person who is involved in putting technology into the hands of the businessmen who can utilize it.

NASA Technology/Commercialization - Mr. Chuck Kubokawa

Mr. Kubokawa prefaced his remarks on NASA Technology by describing his experiences at a minority business development conference which he had recently attended in San Francisco. Many businessmen had traveled from Japan to attend this conference, and much of the discussion centered on the difficulties of communication across cultural barriers.

According to Mr. Kubokawa, the actual difficulty in cross-cultural communication lies not in the differences in vocabulary, but in the different structures of reasoning. Persons of diverse backgrounds are often communicating with each other on different levels, from different perspectives. If a person does not perceive this disparity in structure, he may fall into the pitfall of believing he understands something, when, in reality, he has not grasped it.

Mr. Kubokawa stated that the need for communication between cultural groups, nations, and communities is fast increasing. For example, engineers and planners often become frustrated when they cannot translate the terms of the layman into their own specialized language. However, some field engineers are more sensitive to a person's needs than some social scientists who act as "do-gooders" and treat people and communities as their inferiors.

Mr. Kubokawa then began his presentation on commercialization of NASA Technology by showing some slides of some of the products which have been developed. The first product presented was an airline seat which has been made safer through the use of a foam developed by NASA; Mr. Kubokawa explained that this type of seat could be developed for use in other vehicles. Another product, the "cool head" helmet, is used for the protection and control of temperature of car racers' heads. This product used a thermo-regulator which had been developed for controlling heat in astronauts' suits. This device is now being researched for use as a head cover for leukemia victims to protect their hair from falling out when they receive chemo-therapy. It has been utilized in a garment for infants who must undergo surgery and whose body temperature must be carefully regulated to insure survival; and in a thermo-sensing capsule which can replace the thermometer.

Mr. Kubokawa interjected to explain that eventually people will be living in space, and many new devices will be necessary. He noted that in 1971, NASA spent two billion dollars in research; in 1976 they will spend 3.5 billion dollars.

He then exhibited another product, a Thermo X-Glo bag, which is used for reflecting the heat of the sun. It can be used for keeping sleeping bags warm; it can also be used as a safety device. For example, persons who have capsized on the ocean would wear these bags and be easily spotted and rescued.

Mr. Kubokawa explained that nutritional, chemical, electrical, mechanical, and industrial files are kept by NASA in addition to space information. Private industry can avail themselves of these files.

Mr. Harrison Allen, Jr. from the NASA Lewis Research Center was recognized to describe additional examples of NASA developments. These developments included:

- foam which contours to the body
- stadium blanket and clothing using aluminized inner linings
- a rescue light which can be seen under water for 20-30 miles
- a unit for identification of money by the blind
- a thermo-cooking pin for rapid heating

Mr. Kubokawa then resumed his presentation to tell the participants that NASA personnel would remain in the main conference room to answer questions. He explained that NASA must report all new research and development in flyers called Tech Briefs. He indicated that there were Tech Briefs on the information table, and that the businessmen should scan these briefs to see what they need and how these developments can be utilized.

Mr. Kubokawa concluded by directing the participants to the workshops.

ELECTRONICS WORKSHOP

Mr. Howard Ogushwitz - Moderator

Mr. Ogushwitz introduced himself as an information specialist from NERAC. He explained that NERAC has computer banks containing vast amounts of technical information, including NASA files. He defined a file as a tape which includes abstracts of information. NERAC also maintains an information file on market analysis; so, if a client had a specific question on a particular problem, NERAC would consult this file.

Mr. Ogushwitz then reiterated NASA's offer of one free search to each participant; he explained that they would receive the information requested in the form of a computer abstract.

Mr. Ogushwitz informed the participants that NERAC was not a licensing or patent office; it merely provides information. It can answer the questions: "Can it be done?" and "Has it been done already?" He indicated, however, that NASA has a listing of all its patents which is available to the general public.

A participant asked, "How general can the questions be?" to which Mr. Ogushwitz replied that they can be as general as the client desires.

A businessman stated that he would like to keep abreast of what exists in power supplies. Mr. Ogushwitz had a list of about 370 items under "Power Supply" for which abstracts exist.

The question was asked, "How can we get more specific in the question?" Mr. Ogushwitz replied, "It would take about two hours of time to get, for example, information on 'Power Supply Circuits'. It would depend on the person, how important this answer is to him, and if the time consumed in this research is necessary."

A gentleman from the audience asked for information on "power supply transformers". Mr. Ogushwitz took the above question and the man's name and address and indicated that he would send him the information.

Mr. Ogushwitz explained that some of the subjects are intermingled when they come out of the computer, so the point of the search is to narrow down the question which is asked. He said that the NERAC system was good, but not perfect. For example, if a question cannot be translated into words which the computer can read, the answers will not be available.

A participant asked about information on Hearing Aids. Mr. Ogushwitz said that this search would entail crossing the word "hearing" with the word "electronics". He noted that the NERAC personnel are considered experts because they know the specific terms which abstractors utilize.

A person asked about "computer design" as a category. Mr. Ogushwitz stated that there were about 1200 abstracts on this topic. He asked where the businessman wanted the information cut off, to which the man replied, "at the 500 mark."



A question was asked about the latest advancements in the Hearing Aid Industry. Mr. Ogushwitz took this question and indicated that a search would be done and the answer sent.

A businessman asked, "If I find an abstract that is interesting, then what do I do?" The moderator replied that answers from NERAC usually come back in about two weeks. NERAC advises that information from the bibliographic abstracts can be found at the local library. The participant continued, "If I find that the patent is restricted, what do I do then?" The moderator replied that he could re-contact NERAC and they would further advise him.

Another participant asked about chemical and biological recognition and radiation patents. Mr. Ogushwitz replied that he had some information on this, but he would have to refer the question to his chemical people.

Mr. Ogushwitz then explained that NERAC would search more than one file at a time on any particular question.

Mr. Ray Gilbert from the NASA Washington headquarters interjected that NERAC has experts who can narrow questions down into the specific word before feeding it to the computer. The purpose of this program is to introduce the services available. Questions should be as concise and precise as possible because then the information retrieved will be specific enough to be usable.

Mr. Gilbert assured the participants that this kind of program was not a waste of money for the government because it is important

for the government to become familiar with the needs of minority businesses. He said that NASA wants to deliver something to minority businessmen--information from their files at no charge to the businessman. He said that NASA also has other services. "It is important in this country that minority businesses should be upgraded," said Mr. Gilbert, "and they should have the help of NASA technology." He explained that Tech Briefs contain information on products which has been examined and digested, and then offered to other companies. If a businessman wants to know the status of a particular patent, he should contact Mr. Gilbert in Washington, D. C.

Mr. Gilbert then stated that if a profile was made of the requests filled at NERAC, it would be discovered that they make use of certain information time and time again in problem solving.

Mr. Ogushwitz resumed his talk by indicated that it generally takes from one to three weeks to get the information to a customer.

A question was asked about the cost of the service, to which Mr. Ogushwitz replied that they were "steering clear" of this subject because the charges are very flexible.

A businessman said that one of the interests of his outfit is to try to avail itself of a NASA service or product which has never been used. Mr. Ogushwitz suggested a particular electronic system which the businessman might find interesting.

The workshop session then dispersed into individual discussions.

MECHANICAL DESIGN WORKSHOP

Mr. Joseph LaGambina - Moderator

Mr. LaGambina began his presentation by reminding participants of the one free search to which they were entitled. He then explained that NERAC's information banks are stocked from a number of sources: NASA, the American Society for Metals, and engineering, chemical, and medical sources. He passed around a NASA file for the information of participants. He then opened the floor to discussion and questions.

The first questioner asked about exotic materials and explained that he was interested in the machining of these materials. Mr. LaGambina said that this was an example of a question which could be run through the computer. The technician would consider the problem and determine the "key words and phrases" which can be read by the computer.

Another participant mentioned his interest in the application of paper substrate adhesives on cardboard. He wished to determine the best type of adhesive to use and wanted to know if this question could be fed to the computer for a response. Mr. LaGambina affirmed that it could, and went on to discuss the best way to apply adhesives. He noted the different techniques of bonding different metals, and the techniques for bonding metal to plastics.

He continued by further clarification of the the NERAC services. He told the participants that the computers must be provided with exact information or they will reject it. Computers deal in specifics. Frequency counts have been taken to determine the number of times certain terms have been put into the computer. Mr. LaGambina explained that almost any question can be asked if it is specific enough. A client is never flatly refused; all efforts will be made to get the necessary information. The fee is scheduled as a flat fee for the year; therefore, the more questions asked, the less expensive the service becomes.

Mr. LaGambina then described NERAC's "current awareness program" which keeps clients updated on certain areas of information. He also described their project information file, a management oriented information system which NASA developed at large expense. It includes information on production control systems which can be applied to certain materials and certain workloads.

Mr. LaGambina repeated that technicians must understand what the client needs in order to give him what he wants. It may take a few searches before technician and client can develop a good working relationship. After this is established, pertinent and relevant materials will be supplied in the form of abstracts, and if the center cannot provide the necessary materials, they will go to outside sources.

The moderator indicated that it takes from four to six weeks to receive information, and he reiterated that the first search was free.

Mr. LaGambina concluded by asking the participants to contact him and inform him of the results of their searches.

ENERGY/POLLUTION/MATERIALS WORKSHOP

Mr. Rex Snodgrass - Moderator

Mr. Snodgrass opened his workshop by asking all participants to introduce themselves. He noted the small size of the workshop and decided that it would be most productive to combine the three listed topics for the workshop. He suggested that the participants mention their areas of interest so that he might concentrate on them. Several participants mentioned an interest in solar and other alternative energy resources.

Mr. Snodgrass began by giving a general description of NERAC services. He explained that the essential mission of NERAC was to disseminate usable technical information to the private sector. He told the participants that NERAC is largely NASA funded, although it is also partially supported by the University of Connecticut.

Mr. Snodgrass reminded participants that they were entitled to one free search which usually costs between \$300 - \$800. He said that NERAC has a wide spectrum of technical and scientific information on a variety of topics, "from nuts to bolts to new space age materials." They have information sources on such topics as metals and composite materials. On alternative energy sources, they also have much information. For example, there are new carbon fibers used in constructing super flywheels, which are

modern renditions of an old method of storing and using the wind's energy. Mr. Snodgrass continued on the topic of energy by describing how a number of natural resources can be combined to provide efficient and practical energy utilization.

He then resumed his description of the NERAC search process. He explained that NERAC has scientific and technical information on tapes, technical personnel who will discuss specific problems, and access to data banks through the use of key words and phrases. These key words and phrases are combined into groups to form logical stratagems.

According to Mr. Snodgrass, the point of these searches is as follows: "Why should you have to re-invent the wheel when someone else has already done the work?" NASA has invested large amounts of money in the space program, and the taxpayer, the "guy on the street" wants to know how this benefits him. NASA is sensitive to this fact and wants to disseminate this information to the private sector businessmen who can use it. For this reason, the Industrial Applications Centers were set up. NERAC works full time for small and large businesses. The clients discuss their problems; a technical search is performed; and the clients receive a computer search printout with bibliographic references, citations, and abstracts. The client can then judge if the material is relevant; if it is not, NERAC will consult other sources.

A participant mentioned that "technology is flying out so fast" that whatever you buy this week may be obsolete next week. This is

particularly true with areas such as solar energy. This makes it quite difficult for the small businessman. Mr. Snodgrass agreed and noted that this was the price you must pay to be the company which introduces a new product.

The participant continued that the media discourages the use of solar energy because they are indebted to giant oil, gas, and coal corporations. Mr. Snodgrass mentioned that he had just completed a study on the practical, cost, and technical aspects of the utilization of solar energy in the New England area and had found it to be quite feasible. Another participant commented that it was necessary to be concerned with the total situation. It is only logical that big companies push their own schemes; but there will be breakthroughs which will enhance the use of solar energy.

Another businessman mentioned that there has to be continuing access to new developments, and this requires money. The minority businessman needs access to capital sources to develop these kinds of new products. Mr. Snodgrass commented that there is no completely accessible way to bring solar energy to the market because of people's attitudes, zoning laws, politicians, etc. Some bills have been passed on the federal and local levels regarding sun rights and local tax rebates for the use of solar power.

He continued by saying that solar energy is even now competitive in price with electricity, and although oil is still much less expensive, another oil embargo might alter that situation. The use of solar power

requires a large outlay of capital at the beginning; however, there is little upkeep expense and the "fuel" is free.

Mr. Snodgrass then passed out search forms and instructed the participants to fill them out so that he might contact them.

A participant asked about the patents and rights to all this technology. Mr. Snodgrass explained that NERAC did not usually become involved in this area, but that they could put the client in touch with the proper people.

Harrison Allen, from the NASA Lewis Research Center, interjected here to explain NASA's patent policy. He said that when products are developed for NASA use, NASA has the option of applying for a patent. If they don't make application, the field is open to anyone. If they do, they can issue to applicants either exclusive or non-exclusive patents.

A businessman asked how many of these patents had been issued to minority firms, to which Mr. Allen replied that he did not know. The participant continued by asking if there was any listing of patents which minority companies had the capabilities to develop. Mr. Allen said that there is a listing of NASA-held patents, both exclusive and non-exclusive.

Mr. Snodgrass mentioned some practical aspects of the patenting situation, that aerospace companies, for example, have a big advantage because of their continuing contact with NASA. In addition, companies who develop products for NASA use have a decided edge in receiving patents.

A participant asked if NERAC had anything applicable to the Bio-Medical field. Mr. Snodgrass replied that there was much information concerning bio-medical applications of NASA technology.



Another participant explained that his business was the reduction of records onto micro-film and micro-fiche, and he requested information on technical photography. Mr. Snodgrass explained that the search process is generally the same for opening access to any field.

Mr. Snodgrass urged participants to try the free search, to see what the capabilities of NERAC were, and to determine if the service could be worthwhile for their companies.

Harrison Allen again interjected that the function of the conference was to acquaint participants with the fact that NASA has a wealth of information which the participants, as taxpayers, have paid for, and to which they can obtain access. Each NASA Field Center has been instructed to formulate a minority business council, and each Field Center has an equal opportunity office. These sources should be contacted for information concerning the possibility of doing business with NASA.

Mr. Snodgrass mentioned that the participants could initiate a search by either staying through the afternoon for individual consultation or by filling out the search request form so that Mr. Snodgrass could contact them. Harrison Allen distributed his card to the businessmen present so that they might contact him about possible opportunities with NASA.

The workshop continued by dissolving into individual consultation sessions.

#### IV. EVALUATION

##### Evaluation Questionnaire - Comments

The evaluation questionnaire which was distributed at the Boston conference was compacted both to reflect the shorter and more concentrated nature of the program and to facilitate the completion of the questionnaire by participants. In order to encourage the participants to turn in the questionnaires, an announcement was made at the introduction to the conference and at each of the three workshop sessions urging participants to complete their questionnaires. In addition, conference personnel were stationed near the exits to remind participants to complete the form before departing.

The reaction of minority business representatives to conference activities was generally quite positive, according to the results of the questionnaire. Several areas were highlighted for critical consideration through responses and comments made on the questionnaire and remarks heard at the conference.

The invitational procedures used for the Boston conference were quite successful, according to the reaction of participants. Respondents to the questionnaire indicated that they found the invitation clear, and that they were provided with sufficient information. A significant majority (67%) found the telephone invitation follow-up to be of assistance in their decision to attend the conference. Most participants were satisfied with the advance notice before the conference; only two rated it as too short.

The logistics of conference time and site were found to be convenient by most participants. The fact that the conference was on a weekday morning was judged to be inconvenient by only three participants; and the bulk of the respondents found the location convenient. Facilities for the conference were rated either good or excellent by all of the participants.

The area of findings from the Boston questionnaire which should be most critically examined is the results concerning the Technology Utilization workshops. On specific issues, such as the knowledgeability of the moderator, the clarity of presentations, and the relevance of materials, most participants gave the workshops high ratings. Most respondents also affirmed that their questions were easily answered. However, when asked to rate the workshops overall, only three considered the workshops excellent. In addition, comments on the questionnaires and verbal comments made during the conference seemed to indicate a certain degree of dissatisfaction with the workshops. Several participants had negative reactions to the brevity of the workshops and many commented on the lack of preparation concerning the specific interests of participants.

In summary, the participants generally rated both preparation and the conference highly; however, several specific criticisms were registered in regard to the moderation of the workshops.

RESULTS OF 19 EVALUATION QUESTIONNAIRES  
COMPLETED BY MINORITY BUSINESS REPRESENTATIVES  
IN BOSTON, JULY 1, 1975

BOSTON TECHNOLOGY UTILIZATION CONFERENCE  
EVALUATION QUESTIONNAIRE

1. Invitation Clarity	Good: 18 Poor: 1	
2. Invitation Information	Sufficient: 17 Insufficient: 1	
3. Telephone Invitation Follow-Up	Helpful: 12 Unnecessary: 6	
4. Conference Location	Convenient: 17 Inconvenient: 2	
5. Weekday Conference	Convenient: 16 Inconvenient: 3	
6. Advance Notice	Sufficient: 17 Too Short: 2	Too Long: none
7. Conference Facilities	Excellent: 1 Good: 8	Poor: none

-----  
Please circle the Technology Utilization Workshops which you attended:

A - Electronics    B - Mechanical Design    C - Materials    D - Pollution    E - Energy  
-----

1. Workshop Leaders	Knowledgeable: 18 Uninformed: 1
2. Workshop Presentations	Clear: 17 Unclear: 2
3. Workshop Materials	Relevant: 16 Irrelevant: 2
4. Workshop Materials Coverage	Sufficient: 16 Insufficient: 3
5. Were Questions Answered	Sufficiently: 16 Insufficiently: 3
6. Workshop Rating	Excellent: 3 Good: 15 Poor: 1

Evaluation Questionnaire - Summary of Results

The following is a summary of the results received from the participants who responded to the evaluation questionnaire at the Boston Technology Utilization conference held July 1, 1975.

In evaluation of the invitation process, 95% of those who responded found the invitation to be clear; only one participant judged the clarity of the invitation as poor. In regard to invitation information, only one participant suggested that more information should be included, 94% found the information in the mail-out to be sufficient. The telephone invitation follow-up was considered helpful by 12 participants or 67% of those who responded; it was judged unnecessary by 6 or 33%. 17 respondents were satisfied with the advance notice given before the conference; only 2 participants considered it too short, and none found it too long. One comment was written concerning the invitation process: "Invitation clarity lacked sufficient information regarding purpose."

The scheduling of the conference on a weekday was considered convenient by 84% of the participants, while the location was rated convenient by 89%. 3 participants considered the weekday an inconvenient time for them; and 2 considered the site inconvenient.

Participants were generally pleased with the hotel as the facility for the conference. 58% rated facilities excellent, while 42% found them good.

The responses and comments concerning the main activities of the conference, the Technology Utilization Workshops, were generally positive, with some specific criticisms. Workshop moderators were considered knowledgeable by 95% of the respondents. Seventeen participants indicated that the workshop presentations were clear; two found them to be unclear.

Workshop materials were generally well-rated, while the coverage of workshop materials received fewer positive responses. Eighty-nine percent of the respondents indicated that they found workshop materials to be relevant; fourteen respondents, or 82%, found the coverage of materials to be sufficient. Eighteen percent considered the coverage insufficient.

Most participants (84%) thought that their questions were answered sufficiently. However, three participants were dissatisfied with the manner in which questions were answered.

Workshop sessions were generally considered good (79%); only three participants considered them excellent; and one participant thought that the workshops were poor.

Two written commentaries concerning the workshops were included in the questionnaires. One respondent stated, "Presentations were good but a bit brief." Another participant included the following suggestion: "On invitation information in conjunction with presentation - invited guests should be much more informed as to what the capabilities of the computer search and guidelines for conducting a search; so that

searches can be conducted on the spot. This way people can bring specific questions for the search (after they have conducted careful research into what specific answers they are seeking)."

The findings from the evaluation questionnaire indicate that participants had generally positive reactions to pre-conference preparation, logistics, and facilities; the reaction to the workshops was basically positive although very few considered the workshops as excellent sessions and a number of participants thought that there was potential to the workshops which was untapped.

V. CONTRACTOR'S EVALUATION AND COMMENTS

As explained in the section of this report entitled Conference Preparation, several changes were made to the program format and a different type of facility was used to house this conference. There are several observations relative to these changes worthy of comment, as well as problems which developed in the course of preparation and execution of the conference which should be noted.

The program format, changed to limit the time and number of introductory speakers and extend the workshops, appeared to work well. There were no negative comments from the audience about the introductory portion of the program being a waste of time, as was the case with the previous conferences. The audience appeared to be fresh and eager to get into the workshops after leaving the short introductory session. Throughout the Boston conference, the minority businessmen appeared to have a firm grasp of the NASA intent to help the minority business sector through technology transfer. This apparent understanding is in sharp contrast to the confusion and antagonism which generated from previous audiences who were laboring to deal with the concept of how presentations by private and public sector procurement officers were linked to a data bank search and technology utilization, particularly since these presentations occupied a large part of the program.



The Sheraton Boston Hotel provided excellent assistance and support in preparation for the conference. The significant observation to be made about the facilities was the positive effect created by the close physical proximity of each portion of the program. The registration table was conveniently near the entrance to the conference, thus allowing the doorway to be used as a control and information desk. Additionally, the registration table was situated within a few feet of the main meeting room and the workshops. This physical arrangement allowed the contractor's personnel to assist each person as he moved from one part of the program activity to another. The total process was efficient because all the rooms employed were either adjacent or across the corridor. Thus, the physical transitions of the audience took no more than five minutes, with little or no confusion or loss of participants. In retrospect, transitions in Houston averaged fifteen minutes because the rooms were on different levels of the same building, and in Los Angeles, where portions of the program were housed in three different buildings, transition time grew to thirty minutes or more. This caused losses in the audience and some transitions were never completed because of the large numbers of areas for participants to escape the program and socialize. The adjustments to the program format and facilities were made to focus the attention of the audience on the workshops, which are the real foundation of the program, and this area is ultimately where problems arose.

During the course of the workshops it was observed by the contractor that a great number of participants left the electronics presentation early and were not interested in trying any of the other subject presentations. When the contractor approached two of the departing participants, he was told that the NERAC workshop leader was not prepared to answer their questions. The two participants quoted the workshop leader as saying, "I don't know, I was only told about this ten minutes ago," when he was addressing a question about the program. The result was a general weakening of the program since more than half of the participants were exposed to the electronics presentation. The reason for the lack of preparation by the NERAC personnel was a standing order by the director of NERAC, Dr. Daniel Wilde, not to expend any time in preparing for the conference until his contractual requirements had been met by NASA. Dr. Wilde and/or his administrative assistant stated that they might not show up for the conference if their requirements were not met by NASA. This statement was last rendered to the contractor by Dr. Wilde as late as 2:45 P.M. on the Friday before the conference, at which time it was too late for any preparation by his personnel.

It is recognized by the contractor that it is a shrewd businessman who recognizes the pressure points and employs them in his favor during negotiations, but there appeared to be more negative motivation displayed here than just shrewd business tactics. The

fact that NERAC is one of the most successful IACs in the system was continually reiterated by Dr. Wilde and his assistant, reflecting NERAC's success with the large New England population of sophisticated manufacturing firms. Due to their success, Dr. Wilde indicated that they did not have time to take their men from their normal duties to prepare for the conference. The contractor is of the opinion that the tactic was good business; but the extent to which it was carried represents a complete lack of commitment to the small minority manufacturing community of New England. This lack of commitment was further evidenced by the fact that Dr. Wilde, the only NERAC person at the conference with knowledge of the program, departed as soon as the workshop leaders arrived, thereby rendering no assistance to his unprepared personnel. It is true that the immediate profitable market for NERAC services lies in the majority community, but the federal tax dollars which subsidize NERAC dictate that they adhere to national policy as stated by the President, the Congress, and NASA by at least putting the minority business sector into their scope of interest.

## APPENDIX IV

San Francisco Technology Utilization Conference

Held September 11, 1975

TowneHouse Hotel

## TABLE OF CONTENTS

I.	PREFACE.....	1
II.	PREPARATION.....	2
	A. Site.....	2
	B. Recruiting Minority Businessmen.....	2
	C. Formal Invitation.....	3
	D. Agenda.....	3
	E. Agenda Participants.....	3
	F. Follow Up and Final Preparation.....	4
III.	CONFERENCE.....	5
	A. Attendance and Profile of Attendees.....	5
	B. Proceedings.....	5
	1. Welcoming Address.....	6
	2. Program Introduction.....	6
	3. Commercial Application of Space Technology.....	7
	4. NASA Patents and Licensing.....	9
	5. Luncheon Address.....	11
	6. Industrial Applications Center System.....	13
	7. Workshop I.....	15
	8. Workshop II.....	16
	9. Workshop III.....	17
	10. General Overview and Summary.....	19
IV.	EVALUATION.....	21
V.	CONTRACTOR'S OBSERVATIONS AND RECOMMENDATIONS.....	27

## I. PREFACE

The San Francisco Technology Utilization Conference which was held September 11, 1975 at the TowneHouse Hotel was extremely well received by participants. Comments made by minority businessmen and responses to evaluation questionnaires regarding the program's purpose, the technical workshops, and the program personnel were overwhelmingly positive.

Although there were some coordination difficulties with local contact personnel, the preparation phase of the conference was generally smooth. Experience gained through former conferences was utilized to organize efficient pre-conference procedures.

The conference proceedings were very successful. The practical utilization of NASA Technology and the personal approach to the technical workshops were judged by participants to be particularly valuable and interesting.

Participants at this conference voiced the most generally positive reactions to the proceedings and the program as any participants in the series thus far. The various alterations and additions which have been developed throughout the series to stress, highlight, and focus upon the purpose of the conference have thus produced their desired effect.

## II. PREPARATION

The San Francisco conference was planned and executed using the methods and models which were proven to be successful for former conferences. The processes for preparing the agenda, site selection, and invitational mailout generally ran quite smoothly. However, there were several problems in recruitment of minority businessmen due to a lack of coordination of effort by a number of the key local contact personnel.

The contractor arranged for a site visit to choose a location for the conference and to meet with key minority organization representative. The contractor arranged for this meeting in order to procure mailing lists of minority entrepreneurs in the area and to inform the local minority organization of the conference events for their information and support. The meeting was agreed upon; however, when the contractor arrived, a number of the local personnel had failed to appear.

The contractor was nevertheless assured that mailing lists and support would be forthcoming. The local personnel had been informed of the time factors involved, yet by the target date for the first mailout, the contractor had received only one mailing list. The remaining list did not arrive until one to two weeks before the conference date.

All mailing lists received (Asian-American Manufacturing and Wholesale Suppliers, Minority Industrial Suppliers, Source Publications, Inc., University of California, Berkeley, Office of the Chancellor) were screened.

Although time limitations were stringent, both first and second mailouts were sent to all appropriate firms. The number of invitees to whom invitations were sent totaled 148.

The forced lateness of the procedure presented a number of problems. Invitations were not sent out until a week before the conference date; the telephone follow-up process was so delayed that many invitees could not be reached. It was extremely difficult to make attendance predictions and to draw up a confirmation date.

The drafting of an agenda was also effected by the late arrival of mailing lists. Although the introductory portions of the program were smoothly planned and speakers chosen, problems arose on the issues of the luncheon and the workshops. Because it was extremely difficult to gauge the number of attendees, a luncheon speaker was tentatively engaged on the conditions that the number of attendees would warrant a formal luncheon. Because of the unpredictability of numbers and types of firms, the workshops were planned to encompass a number of possibilities. The Industrial Applications Center involved in this conference, the Western Research Applications Center (WESRAC), was also involved in the Los Angeles conference. Because of their experiences in LA, they had several suggestions for the workshops at this conference. Thus, an on-line terminal was utilized in the workshops so that any type of participant could be exposed to the methods and information of WESRAC in his own field.

Materials were compiled and prepared for the conferees, including tech briefs in various fields. Clerical support was contracted, and press releases were sent to the minority media sources and several of the major local television and radio stations.



As soon as confirmation predictions were possible, the luncheon speaker was confirmed and a buffet luncheon planned. Local contact personnel, agenda participants, and the WESRAC personnel were kept informed on new developments.

The site chosen for this conference, the TowneHouse Hotel in San Francisco, was informed of the necessary logistical arrangements for the conference. On October 9, 1975 a conference center was established on site and all final local contacts were made. Displays and materials were arranged, luncheon arrangements finalized, and the site was prepared for the conference.

### III. CONFERENCE

#### Attendance and Profile of Attendees

Twenty-four technically oriented minority businesses were represented at the conference. These firms sent a total of thirty representatives to attend the conference.

Companies which attended were asked to indicate both their annual sales volumes and their total number of employees. Fifty-two percent of the companies which attended had sales volumes of less than \$100,000 a year. Of companies with sales volumes of greater than \$100,000 a year, 10% made between \$100,000 and \$250,000; 24% between \$250,000 and \$500,000; and 14% over \$500,000.

The number of employees in each firm ranged from one to twenty-five. Fifteen of the companies (71%) indicated that they had less than ten employees; the remainder indicated having more than ten. Two companies employed twenty-five people each.

The profile created by these statistics indicates that the majority of firms in attendance were businesses with low annual sales volumes and small shops. There were a number of firms in attendance, however, which were relatively large in comparison to the average minority business.

#### Proceedings

The seminar was convened with a welcoming address to the participants given by Mr. Powell McDaniel of the San Francisco OMBE Regional Office.

#### Welcoming Address - Mr. Powell McDaniel

Mr. McDaniel welcomed the participants to the conference in the name of OMBE, one of the co-sponsors of the program. He noted that the purpose of the conference was to introduce minority businessmen to technology utilization. He explained that this was the fourth in a series of minority seminars on this topic, and that future conferences would be held in Chicago and Atlanta. Mr. McDaniel indicated that the participants had been carefully chosen on the basis of their involvement in technical and manufacturing industries. He concluded by expressing his hope that the participants would have a productive and successful day.

Mr. Ray L. Gilbert, Manager of State and Local Technology, NASA Technology Utilization Office in Washington, D.C., opened the formal proceedings by addressing the audience on the program objectives.

#### Program Introduction - Mr. Ray L. Gilbert

Mr. Gilbert began his presentation by introducing the participants to the other key resource personnel present: Mr. Ted Lettes, National Coordinator of Technology Utilization for OMBE in Washington; Mr. Chuck Kubokawa, Chief of Technology Utilization Office at Moffett Field; and Mr. Radford King, Director of WESRAC, the Industrial Applications Center in Los Angeles. Mr. Gilbert explained that these individuals should be utilized by participants as sources of information and assistance. They would be available throughout the day to advise participants on methods of developing and building their companies. The purpose of this conference,

according to Mr. Gilbert, is to move minority businesses toward expanded technological development. He explained that minorities represent 25% of the population; however, their representation in business is a mere 4%.

This series of conferences is intended to aid minority businessmen in upgrading their companies so that they might become more involved in the mainstream of American business. One means of accomplishing this is transfer of technology.

Mr. Gilbert concluded by introducing Mr. Chuck Kubokawa who would address participants on some practical examples of technology transfer which have already been accomplished.

#### Commercial Applications of Space Technology - Mr. Chuck Kubokawa

Mr. Kubokawa's presentation was combined with slides illustrating the kaleidoscope of inventions which has been developed by NASA. He began by stating that in 1969, the year of the first moon landing, NASA seemed remote from day-to-day life. However, as the slides vividly depict, the technology NASA developed for its space program has been usefully and practically applied to solve problems on earth. Technological advancement has proceeded to extremely complex levels. Mr. Kubokawa illustrated this fact by indicating that thirty years ago, aircraft were equipped with extremely simple mechanisms; there were only three instruments of any importance. Today, however, the complexity of building an aircraft is enormous.

Mr. Kubokawa then illustrated some of NASA's technology which has been practically utilized.

Infra-red photos have been used to show different methods of soil cultivation, resources, and weather developments. Aerial ektachrome photos have been used to show infestation of trees by insects and various diseases.

Paints have been developed from NASA inventions to protect wood from damage by fire.

Mr. Kubokawa showed a "cool head" helmet which was developed from space suit research. These helmets can be used by steel workers, patients in chemo-therapy, and car racing drivers to protect their heads from damage by heat.

Many medical breakthroughs have occurred as a result of NASA technology, Mr. Kubokawa explained. Wheel chairs have been developed which can be controlled by the eye, and thermo-sensing capsules may replace the thermometer.

Space technology has also been applied to the development of backpack type equipment which can be used to sustain aquanauts in underwater exploration.

Mr. Kubokawa explained that NASA developed this technology through the \$3.5 billion a year which it receives from the government. As is illustrated in the aforementioned examples, these tax dollars can be applied to practical usage on earth.

Mr. Kubokawa then introduced a colleague from NASA's Ames Research Center in Cleveland, Ohio, Mr. Harrison Allen, Jr., Technology Utilization Engineer. Mr. Allen would continue the presentation on applications of NASA technology.

Commercial Applications of Space Technology - Mr. Harrison Allen, Jr.

Mr. Allen displayed a number of items which have been developed by NASA and are currently available on the market:

Plastic coated aluminum rescue blanket - can be used in rescue operations everywhere. Its purpose is to retain the body heat of the victim.

Pocket rockets - torches which can be used to illuminate highways or be used in rescue operations.

Rescue light - a lamp which can be seen from up to ten to twenty miles.

Heating pipe - a device used for cooking meat from the inside.

Cushions - that mold to the body of the person sitting on them.

A device which can be used by the blind to recognize the denominations of paper money.

Mr. Allen concluded by reiterating that NASA technology has been used to create these products which are currently being marketed.

Mr. Ray Gilbert returned to the podium to introduce Mr. Darrell G. Brekke, Patent Counsel at Ames Research Center, who would address the participants on procedures for acquiring NASA patents and licenses.

NASA Patents and Licensing - Mr. Darrell G. Brekke

Mr. Brekke began by stating that NASA has been an innovator in establishing its patent and licensing procedures. He informed the participants of NASA's portfolio of patent licensing regulations. Participants were then informed of the NASA Technical Information Service (NTIS) through which they would be given access to a wealth of patent and licensing information. For example, the NTIS publishes a

Patent Abstracts Bibliography which contains a sketch of every NASA patent available for licensing. It is updated semi-annually and is indexed by subject, inventor, source, and number. Copies of this publication are available through NTIS.

Mr. Brekke then gave an example of a practical usage of a NASA patent. It was discovered by the manager of an airport that parked aircraft were vulnerable to theft. The manager took advantage of a NASA patent and had his company use a device which reads heart pressure to activate an alarm in the aircraft when an intruder touches the system. Mr. Brekke used this example to illustrate the point that with a bit of ingenuity one can use a specific invention for a quite different use than the original intention.

Mr. Brekke then explained the difference between an exclusive and non-exclusive license. An exclusive license can be limited either territorially or concerning its specific usage, and a royalty must be paid. For non-exclusive licenses there are no limits and no royalties to be paid.

Mr. Brekke indicated that application forms for both types of licenses are available from NASA. In the application, NASA seeks information concerning the business plan and the target date for marketing of the product. In the case of competition for an exclusive license, a small or minority business will be preferred. License applications are rarely denied.

Mr. Brekke concluded his portion of the program by explaining that the time span for a non-exclusive license is about two months; an exclusive license takes a little longer. He stressed that there are many inventions in the bio-medical field with very good marketing potential.

Mr. Ray Gilbert concluded the morning's activities by emphasizing that the technology presented at this meeting cannot be taken out of a basket and sold; it has to be utilized in a particular way according to the individual's business resources. The information and data bases are inclusive of not only NASA information, but also many other sources both here and abroad.

#### Luncheon Address

A buffet luncheon was held, at which Mr. David Ushio, National Director of the Japanese American Citizens League, addressed the participants on "Asian American Involvement in Minority Business".

#### Luncheon Speaker - Mr. David Ushio

Mr. Ushio introduced his topic by illustrating some of the myths and stereotypes about Asian Americans. It is generally believed, according to Mr. Ushio, that Asian Americans are a "model minority"; that is, that the Asian American businessman has "made it" and does not actually need help. However, this is proved untrue by statistics. Last year, Asians made only \$2.8 million in gross sales as compared to \$2 trillion in the gross sales of all American businesses. Eighty-nine



percent of these businesses are sole proprietorships, of which 83% are family run businesses. The businesses remain mainly in ethnic communities. Thus, the myth that Asian American businesses need no assistance is untrue. Nevertheless, they are often excluded from minority eligibility because the public retains its false notions.

Mr. Ushio explained that in the political realm, the Asians are often overlooked when money is appropriated because they are not vocal enough, they are segregated on the two coasts, and people believe the myth that Asian Americans control corporations and capital in the Orient. However, Mr. Ushio stressed that this community needs monetary assistance. He explained that the Asian American in business has difficulty sustaining long term business success because of discrimination. They often remain in the middle level and are neglected for high level promotion.

Mr. Ushio had several suggestions for improving the situation. The first method would be to recruit from all minority groups and to review policies that have precluded Asians from getting funded. The government should also encourage minorities to get charters from financial institutions. He also made the following recommendations: to strengthen and expand currently established Asian American business; to expand financial assistance, to improve business development assistance, to expand the market for their products, to identify agencies where minorities can participate, to make contracts available to minority businesses through OMBE, to maintain and expand liaison at the national level, and to increase the budget for technical and management assistance to small minority businesses.

Mr. Ushio concluded his talk by stating the need for minorities to work together as a group to effect massive changes; in this way, minorities will be able to make the greatest contributions on the highest level.

#### Afternoon Program

##### The Industrial Applications Center System

Mr. Radford King, Director of WESRAC, resumed the formal program by addressing participants on the information and services available through WESRAC. He explained that the purpose of WESRAC is to give technical information and advice to the community.

Mr. King enumerated the types of information which WESRAC stores and makes available to clients. WESRAC's data banks encompass a massive amount of published material from this and other countries; they also have access to numerous automated data sources throughout the country. WESRAC will contact technical personnel who can render specific assistance to businesses. Effectively, WESRAC acts as a catalyst which makes available to clients information and resources from NASA.

Mr. King described the main purpose of WESRAC as being the utilization of automated retrieval systems for solving problems. He then described the COSMIC service, a computer dissemination center in Georgia which makes computer programs available to the private sector.

Mr. King told the participants that WESRAC deals confidentially with their clients, using search specialists (technical personnel competent in a

particular discipline) to help solve problems. WESRAC will search out new methods and products for clients, and all participants at this conference will be able to initiate one free search--at NASA's expense.

Mr. King concluded by telling the participants that WESRAC does not solve the problems of the businesses; the businessman must do this for himself. However, WESRAC can provide the information and expertise to help him solve the problem.

### Technology Utilization Workshops

The Technology Utilization Workshops at this conference centered around the use of an on-line terminal connected to WESRAC's data bank. After a bit of general conversation concerning the service, demonstrations were made on the terminal to illustrate to participants the type of information available in their fields.

#### Workshop I - Dr. Robert Mixer, WESRAC

Dr. Robert Mixer of WESRAC moderated the first workshop. Dr. Mixer reiterated to participants that NASA would fund one free search for each minority businessman present. He told participants that the proceedings at this workshop would assist them in making their searches effective. Copies of the search request form were distributed and the businessmen were told that the forms should be returned to WESRAC within thirty days of the conference date. Dr. Mixer explained how the search form should be completed.

He then proceeded to display to his audience a computer print out from the NASA file as an example of the type of information which can be produced by the search. He noted that three types of information can be procured from NASA: abstracts and reports, tech briefs, and special publications.

Dr. Mixer emphasized that there is a great breadth of coverage to the data bases. There are approximately seventy data bases at present, covering a wide area of technical applications. A participant asked if

WESRAC could make searches for marketing data, to which Dr. Mixer replied that WESRAC specialized in technological information, and not primarily in marketing data.

The remainder of the workshop was dedicated to the demonstration of the method and results which could be expected from a search through the use of the on-line terminal.

#### Workshop II - Mr. Radford King, WESRAC

Mr. King moderated the second workshop, and he began by explaining the type of information which is produced by a search. He noted that computer search information is bibliographical information, that is, it appears in the form of an abstract or citation. In this way, the client can quickly perceive which articles interest him, and then follow up. The in-depth follow up can be accomplished in one of two ways. Either the client can use public libraries and other sources of public information to procure the articles he finds useful, or WESRAC will perform this service for him. WESRAC will, if necessary, put the client into contact with the technical personnel who can assist the company in utilizing the technology.

Mr. King then directed the attention of the participants to the on-line terminals and solicited a question from the floor in order to demonstrate the terminal. A participant asked, "How will discount stores effect my plumbing business?" Mr. King fed this question into the terminal, and 18 articles were produced. The participant who had asked the question indicated that she would find two of the articles useful and interesting. Mr. King then proceeded to other questions, illustrating the search method.

### Workshop III - Mr. Gunther Redmann, Moderator

Mr. Gunther Redmann, moderator for this workshop, explained to the participants that the on-line terminal would be used to demonstrate the search process. He then elicited questions from the floor.

One participant queried about the possibility of eliminating the tilt of helicopter blades for the forward and hover directions. Mr. Redmann explained that the search methods involved using key words and phrases which the computer can read to produce information. The key word in this case was "stol". Mr. Redmann fed this information into the terminal to search a selection of government reports and analysis data bases which span the past eleven years of research. The computer produced a bibliographic index of 699 articles. Mr. Redmann requested that the participant add more specific information in order to limit the search. He explained that if the index were smaller (i.e., ten indexes) it could be printed out immediately and given to the client so that research could be instantly initiated.

The second question from a participant involved the medical field. The businessman wanted selected information on patients. When this question was fed into the terminal, it showed over 1800 articles on patients. The participant and Mr. Redmann successively narrowed the field by becoming increasingly specific in the area of information desired. Eventually this produced a compilation of about 65 articles.

Mr. Redmann demonstrated further to show how each category could be narrowed to specific areas so as to narrow the scope of the search to a definite point of interest. He explained that it is possible, through WESRAC services to produce a "library" containing all information on a given area, thereby producing a concise, up-to-date library on any subject.

Participants were encouraged to initiate searches and discuss the results. Each participant who initiated a search obtained the computer print out to keep and study.

After all pertinent questions were posed, Mr. Redmann adjourned the workshop.

#### General Overview and Summary - Mr. Ray Gilbert, Moderator

After the workshop sessions, the participants convened in the main meeting room for a general wrap up and summary of the conference. Search requests and evaluation questionnaires were distributed to the participants. Mr. Ray Gilbert moderated the session and encouraged participants to ask questions and make evaluative comments and suggestions.

One participant asked what type of publicity was used. Mr. Gilbert explained that ethnic groups in the community provided lists of minority businessmen which were screened to include those businesses which could utilize the service. One participant suggested that this list should have been expanded to include those people who were interested in going into the technical business, and not limit the listing to those already in business.

Another businessman explained that many invitees who might have benefitted from the conference did not attend because they did not wish to go to a conference sponsored by an agency of the federal government, or they could not take time off from work, or they had not been informed of it. Another participant suggested that better publicity and more creative advertisements might have brought more people to the conference.

Mr. Gilbert asked whether the participants considered the terminals to be a valid part of the workshop demonstration. The general consensus was that this was a valid addition to the conference.



A businessman suggested that the "technology" in the title of the conference might have turned people off. He suggested that the title of the conference be changed.

After evaluation questionnaires were collected, Mr. Gilbert adjourned the seminar by reiterating that participants should initiate their no cost search within thirty days of the conference date.

#### IV. EVALUATION

##### Evaluation Questionnaires - Conclusions

The favorable responses of minority business attendees to the conference activities is counterbalanced by an uneven reaction to the invitational procedures.

Those who received invitations and telephone follow-up calls overwhelmingly rated them to be clear, sufficient and helpful. However, there were 33% who suggested that more information be distributed and 30% of respondents who did not receive phone calls. These figures may be traced to problems in preparation precipitated by a lack of a coordinated effort by local contact personnel which rendered the invitational and telephone follow-up process less effective than it might have been. This topic will be elaborated upon in the contractor's comments and recommendations. It is sufficient to note here that if this large a percentage of attendees noted preparation problems, it is highly probable that there would have been more participants had preparations run more smoothly.

The workshops were very well-received and numerous participants suggested that they should be expanded. In addition, the greatest number of participants (9) suggested an expansion of the commercializing technology sessions. These findings are indicative of a very positive response of businessmen to the main thrust of the program. They also re-

inforce the general trend in this series of conferences towards a concentration on the "working sessions" and a playdown of the filler.

Both the site and the date of the conference were rated highly by the participants. The production of the conference on a weekday inconvenienced only two participants; the balance found this arrangement to be convenient. The location and logistical set-up of the hotel were also found to be convenient by the majority of respondents. This indicates that the choice of a weekday for the time and hotel facilities for convenient and efficient logistical arrangements was successful.

Eighty-eight percent of participants reacted positively (either good or excellent) to the luncheon program; only two considered it poor.

The overall response to the evaluation questionnaire indicates that participants were positively impressed with the program, recommended a concentration and expansion of workshops, and had a mixed reaction to the preparation. It can be inferred that those who were contacted on time were satisfied, while the remaining respondents were unable to be contacted on target due to the late arrival of mailing lists and were thus dissatisfied with the invitational process.

### Evaluation Questionnaire - Results

The evaluation questionnaire distributed to participants at the Technology Utilization Conference held Thursday, September 11, 1975 at the Towne House Hotel in San Francisco, elicited meaningful results concerning the preparation and proceedings of the conference.

Those who responded to the questions concerning the preparation phase present a somewhat mixed picture. Ninety-three percent found the invitation to be clear; 33% suggested that more information be included. Twelve out of thirteen respondents found the telephone invitation follow-up to be helpful; however, 30% of those who answered the questionnaire marked this question inapplicable. These findings indicate that approximately 30% of the participants received insufficient invitational information. Seventy-six percent found the advance notice sufficient.

The choice of site and date was generally quite satisfactory. One-hundred percent found the location convenient; while 88% approved of the weekday conference. Eighty percent found the facilities to be good; 20% judged them excellent; and no one rated them poor.

The workshop sessions received extremely high ratings. All the participants found the workshop leaders knowledgeable and the presentations to be clear. Similarly, every respondent indicated that questions were answered clearly and materials were thoroughly covered. Only one participant found materials to be irrelevant, the balance of respondents was positively impressed by workshop materials. Essentially, there was only one negative reaction to the entire section of questions dealing with the workshops. Sixty-seven percent rated the workshops good;

33% found them excellent.

The luncheon program was received with mixed reactions. Five participants rated it excellent, eight considered it good, while only two considered it poor.

When asked which portions of the program would be expanded, the participants reacted as follows:

Seminar Objectives - 1  
Commerical Application of Space Technology - 9  
NASA Patents and Licensing - 2  
The Industrial Applications Center System - 3  
Technology Utilization Workshops - 4

A significant number of participants made comments and suggestions concerning the conference. These remarks were as follows:

"Fantastic concern by the government to help minorities."

"Workshops and/or seminars divided into some sort of interests, i.e. services, manufacturing, management and consultation, etc....could be more useful and meaningful."

"It would be desirable to have more detailed procedural and cost information on WESRAC."

"More time should be allocated for workshops."

"For me, could have delegated more time for workshops."

Generally, the respondents viewed the conference quite positively and seemed to be particularly interested in concentrating on the workshop and practical applications of the program.

## RESULTS OF EVALUATION QUESTIONNAIRE

DISTRIBUTED AT

SAN FRANCISCO TECHNOLOGY UTILIZATION CONFERENCE  
September 11, 1975

1. Invitation Clarity	Good	14	Poor	1
2. Invitation Information	Sufficient	10	Should Have More	5
3. Telephone Invitation Follow-Up	Helpful	11	Unnecessary	1
4. Conference Location	Convenient	16	Inconvenient	0
5. Weekday Conference	Convenient	14	Inconvenient	2
6. Advance Notice	Sufficient	13		
	Too Short	4		
	Too Long			
7. Conference Facilities	Excellent	3		
	Good	12		
	Poor			

Please Circle Technology Utilization Workshops which you attended:

- A. Workshop I
- B. Workshop II
- C. Workshop III

8. Workshop Leaders	Knowledgeable	16	Uninformed	0
9. Workshop Presentations	Clear	16	Unclear	0
0. Workshop Materials	Relevant	14	Irrelevant	1
1. Workshop Materials Coverage	Sufficient	15	Insufficient	0
2. Were questions answered	Sufficiently	14	Insufficiently	0
3. Workshop Rating	Excellent	5		
	Good	10		
	Poor			
4. Lunch Program	Excellent	5		
	Good	8		
	Poor	2		

5. Which sections of the program do you feel should be expanded?  
(Circle your choices)

- A. Seminar Objectives 1
- B. Commercial Application of Space Technology 9
- C. NASA Patents and Licensing 2
- D. The Industrial Applications Center System 3
- E. Technology Utilization Workshops 4

## V. CONTRACTOR'S OBSERVATIONS AND RECOMMENDATIONS

The site for this fourth conference was changed to San Francisco on the basis of recommendations and guarantees made by local personnel in San Francisco. A large turn-out was promised and local minority organizational support was pledged. The contractor met with several of the local personnel from minority support organizations well in advance of the conference date, at which time it was indicated that he would be provided with ample mailing lists and local support in following up on the invitations.

Neither the basic needs of the contractor nor the additional support promised was provided until much too late for adequate preparation and follow-up work. Most mailing lists were not received until two weeks before the conference date, and the telephone follow-up work was subsequently delayed. Thus, it was impossible for the contractor to make any kind of accurate prediction of attendance in terms of either numbers or types of organizations. The IAC center personnel were unable to prepare presentations tailored to the needs of participants, and the contractor was forced to make site preparations without adequate information regarding turn-out.

The lack of adequate local support was largely due to the fact that the local support personnel could not be coordinated to meet with the contractor at any time during the preparation phase. The time factor is critical in the preparation of these final three conferences as little lead time has been provided for them. NASA's changes of sites and dates on the first three conferences have compacted



the last three seminars into a three month period. Thus, the absence of key local contacts who have obligated themselves to the successful execution of the conference during a relatively large percentage of the preparation time presented a crucial delay in timing.

Additionally, while the contractor was not provided with necessary materials and support, he was informed that one of the minority organizations had begun duplicating the invitational packet and inviting businesses which had not been screened. This kind of loss of control of invitees can result in an audience which is not prepared to take advantage of the services and data offered, and is thus left dissatisfied and disgruntled with the sponsoring agencies.

The Industrial Applications Center personnel in conjunction with the contractor planned their presentations to cover any industries which attended by using an on-line terminal through which a search on any topic could be demonstrated. This approach was well-received by participants and judged highly by the workshop moderators in that it encouraged a large amount of interaction, discussion and questions. It is recommended that, if possible, a similar approach be used in future conferences. It has been the experience at past conferences that the types and capabilities of businesses present have been quite varied. The terminal allows for a personal approach to whatever specific interests are discussed. Workshop sessions divided into general topic areas so that participants would be grouped by interest, combined with the use of the terminal would incorporate the best of both approaches.

It is also suggested, in the light of participant's comments and suggestions and contractor's observations, that the trend towards a concentration on workshops and practical utilization of technology in this series of conferences has produced more successful programs and more satisfied audiences. It is therefore recommended that this arrangement be continued.

The convenience and efficiency of hotel logistics again worked favorably to produce a smoothly run and coherent program. It is suggested that this practice be continued.

The basic agenda of a compacted, concentrated program and tight logistical arrangements has proven to work efficiently in the past and should be continued for the last two conferences. The basic format for invitational and preparation procedures is well accepted, and seems to be inclusive and understandable. The problems which were encountered in San Francisco were due to delays in support by many of the local personnel who had committed themselves to the program but did not perform their functions in a timely manner.

## APPENDIX V

Chicago Technology Utilization Conference

Held October 21, 1975

Illinois Institute of Technical Research

## TABLE OF CONTENTS

I.	PREFACE.....	1
II.	PREPARATION.....	2
	A. Agenda.....	2
	B. Agenda Participants.....	2
	C. Site.....	2
	D. Recruiting Minority Businessmen.....	3
	E. Formal Invitation.....	3
	F. Follow Up and Final Preparation.....	4
III.	CONFERENCE.....	5
	A. Attendance and Profile of Attendees.....	5
	B. Proceedings.....	6
	1. Welcoming Address.....	6
	2. Program Introduction.....	7
	3. Commercial Application of Space Technology.....	8
	4. NASA Patents and Licensing.....	11
	5. Luncheon Presentation.....	13
	6. Industrial Applications Center System.....	16
	7. Aerospace Research Application Center Services.....	17
	8. Technology Utilization Workshops.....	19
IV.	EVALUATION.....	20
V.	CONTRACTOR'S OBSERVATIONS AND RECOMMENDATIONS.....	27

## I. PREFACE

The fifth conference in this series of six technology utilization seminars was held in Chicago on Tuesday, October 21, 1975 at the Illinois Institute of Technical Research. At this point in the series, most content and administrative areas of the program have been developed and formalized on the basis of the results of past conferences.

The preparatory phase, including establishing contacts, recruiting businessmen, and choosing the site, was managed according to the procedures developed through past experiences. All phases of pre-conference activity proceeded smoothly with able assistance rendered by the local contact personnel.

The conference activities and the technology utilization program were received with great interest by the minority business participants. The businessmen expressed extremely positive reactions to the program. In addition, many of the participants, in both verbal and written evaluations, expressed considerable interest in following up on the information they had received at the conference.

The most significant positive aspect of this conference was the size and level of expertise of the thirty firms who attended the conference. Because the firms involved were extremely capable in relation to the average minority business, it is expected that many will have the potential to utilize the services offered.

The aforementioned factors combined to produce a very successful conference, and it is believed that the greater Chicago area will prove to be a fertile ground for the technology utilization program.

## II. PREPARATION

The preparation phase of the Chicago conference was administered and managed in accordance with the procedures previously established for efficient and successful pre-conference activity. The processes of agenda-setting, site selection, minority business recruitment, formal invitation, and final preparations were completed effectively due in part to the cooperation and support of contact personnel in Chicago.

The agenda was drafted and speakers contacted on the basis of the success of the concentrated, shorter and tighter program which had been well received at former conferences. The major alteration made in the agenda proceedings was the change of workshop sessions from group sessions, with question and answer discussion periods, to individual consultation sessions. This change was suggested by the Aerospace Research Application Center (ARAC) on the basis that this would be the best way to utilize their particular facilities.

The contractor made his site visit and considered a number of hotels, government facilities, and several universities in the area as potential sites. Although in the past hotels have proven to be the most efficient sites logistically, the hotel facilities available in Chicago for this date were either logistically unsound or monetarily untenable. The site finally chosen for the conference was the Illinois Institute of Technical Research (IITRI). It offered the best facilities of all potential sites and was reasonably priced for participants. The choice fulfilled expectations, and the IITRI personnel proved to be extremely interested and helpful.

While on site visit the contractor also contacted the Office of Minority Business Enterprise (OMBE) Regional Office for assistance in recruiting minority businessmen. He met with personnel from various minority organizations in order to procure mailing lists. Although the OMBE office showed an initial reluctance to cooperate due to the short lead time, their subsequent support, interest and cooperation was extremely helpful in recruiting procedures. The mailing lists which were received from Chicago contacts and screened for this conference included:

The Greater Chicago Minority Vendors Directory -  
Chicago Regional Purchasing Council, Inc.

The National Economic Development Association

The National Association of Black Manufacturers, Inc.

The National Puerto Rican Business and Marketing Association, Inc.

The National Directory of Minority Manufacturers

In addition, the Business Development Organizations and Minority Enterprise Small Business Investment Corporations (MESBICs) in Chicago, and the bordering states' OMBE offices, were contacted to provide listings of minority businessmen in technical fields.

The final list of attendees comprised 148 minority technical businesses in Chicago and outlying areas. Formal invitations in the form of two mail-outs were sent to all minority businessmen, and each company received a telephone follow-up to explain the conference or answer any questions the businessman might have. All participants who made reservations received a third letter of confirmation.

Key contact people in Chicago were kept constantly informed of the progress of the preparation process. Agenda participants were confirmed and contacted to determine equipment or informational needs.

One day prior to the conference, a conference center was established at the Illinois Institute of Technical Research. The contractor made all final logistical arrangements with the site personnel, the display was set up, luncheon arrangements were finalized, and materials prepared. All final details were covered, and the site was prepared for the conference.



### III. CONFERENCE

#### Attendance and Profile of Attendees

Thirty-eight minority businessmen attended the Chicago conference representing a total of thirty minority technical firms from Chicago and surrounding areas. The thirty companies in attendance comprised the expected 50% ratio of attendees to confirmations for the conference.

The participants in Chicago were an elite group by minority business standards. Almost half (48%) of the firms had sales volumes of over \$250,000; 84% of the firms had sales of over \$50,000. Six firms indicated that their sales volumes were above \$500,000. The average number of employees of the firms in attendance was 16, which is extremely high relative to findings of past conferences. 52% of the firms were businesses employing over 10 persons; 32% of the companies had over 20 employees. Four firms employed between 40 and 50 persons.

It can be inferred from these statistics that the firms in attendance have reached a point of monetary and technical capability which is unusual for minority firms. It is expected that the companies in Chicago will have the potential to utilize the services and information disseminated through this conference.

### Proceedings

The seminar was convened by Mr. Ray Gilbert of the National Aeronautics and Space Administration's (NASA) Technology Utilization Office in Washington, D. C. He opened the conference by explaining to participants that the purpose of the conference was to transfer space technology to everyday life.

He then introduced participants to the agency personnel in the audience who had the potential to assist them. These persons, present in the audience, were Mr. Chuck Kubokawa of NASA's Ames Research Center in Moffett Field, California, Mr. Harrison Allen Jr. of NASA's Lewis Research Center in Cleveland, Ohio, Mr. Jim Dixon of NASA's Office of Equal Opportunity in Washington, Mr. Ted Lettes of the Department of Commerce, Office of Minority Business Enterprise in Washington, and Mr. Dave Vega of the Office of Minority Business Enterprise in Chicago. He also introduced Mr. Mike Clayton of the Illinois Institute of Technical Research who researches the types of NASA technology which are commercially useable

Mr. Gilbert than introduced Mr. Dave Vega of the Chicago Office of Minority Business Enterprise who would welcome the participants for Mr. Jack Smith, Director of OMBE.

### Welcoming Address - Mr. Dave Vega

Mr. Vega welcomed the participants to the conference and explained that OMBE in conjunction with NASA was sponsoring these conferences to expose small minority businesses to the information and services available to them. He indicated that the small businessmen could obtain valuable technical and

managerial assistance through NASA's data banks and OMBE's network of support institutions.

He concluded by stressing that the agencies were sponsoring this conference so that minority businessmen might obtain valuable help which could contribute to their profits.

Program Introduction - Mr. Ray L. Gilbert

Mr. Gilbert introduced the program by giving the participants a brief background sketch on this series of conferences. He explained that four had already been completed in Houston, Los Angeles, Boston and San Francisco, and that the last would be held in Atlanta in November. Mr. Gilbert described the reactions to former conferences as being extremely favorable and complimentary and indicated that many businessmen who had attended other conferences had been sincerely impressed.

The purpose of these conferences, according to Mr. Gilbert, is to introduce space technology to minority companies in order to increase profits and efficiency. NASA has computer centers located at universities throughout the country which contain NASA files on all the technology which has been accumulated through space research programs. Businesses can purchase information from these data banks at charges ranging from \$150 to \$1500, depending upon the complexity of the problem. However, participants at this conference will receive one search at no cost.

Mr. Gilbert then explained that minorities constitute about 15 - 17% of the population and only 4% of the businesses. He posited several reasons to account for these discrepant figures. There are flagrant inequalities in

the society, the main factor being the inequality of the educational process. He also described the exclusion of minorities from political power.

Mr. Gilbert stressed that technology can provide answers to some minority problems - the short life expectancy, the high infant mortality rate, low education level and below average income level. Technology is the creator of more jobs; however, society must utilize the positive effects of technology to help minorities.

Mr. Gilbert concluded his talk by introducing Mr. Chuck Kubokawa of NASA's Ames Research Center to give a presentation on commercial uses of NASA technology.

#### Commercial Applications of Space Technology - Mr. Chuck Kubokawa

Mr. Kubokawa's presentation concerned the way in which NASA technology has been successfully applied on the commercial market. He illustrated his talk with a slide presentation designed to show the participants various innovations.

According to Mr. Kubokawa, NASA technology has been utilized in the development of the following items:

- Aircraft seats have been made safer through the use of NASA developed foam.
- Hurricane spotting devices have been designed and refined using technology.
- U-2 aircraft which can fly 65,000 feet above the earth are utilized for a variety of informational purposes, including pollution studies.
- Infra-red operations are utilized to designate industrial areas and to depict affluent and low income areas.
- Technology has been used to correlate the pollution index with the number of cars on the road.
- Luminescent paint and coatings have been used to protect wood.

- The theory behind the thermal lined space suit has been applied to the development of head-cooling helmets which car racers and patients in chemo-therapy can use to control the temperature of the head.
- Similarly, a thermo-regulated bra has been developed which can detect breast cancer in the early stages.
- An eye-control camera has been developed to aid wheelchair patients.
- The Ames Research Center has been studying the improvement of life for bed-ridden patients. They have developed a "human body wash" with nozzles for showering.
- A sensory device for babies has been developed to indicate if breathing ceases.

Mr. Kubokawa concluded his presentation by stressing that much utilizable technology has been developed from the moon travel projects.

He then introduced a colleague from the Lewis Research Center, Mr. Harrison Allen, Jr., to continue the presentation.

#### Commercial Application of Space Technology - Mr. Harrison Allen, Jr.

Mr. Allen began his presentation by briefly highlighting NASA's historical development. In 1958, NASA was established and since then, over 60 billion dollars have been spent in research. NASA wanted this research information to be disseminated throughout the private sector. Thus, nine industrial applications' centers were established throughout the country.

Examples of technology which have been disseminated through these centers are numerous and varied, according to Mr. Allen. One example is a tough plastic, coated with aluminum, which was developed for the ECHO communications satellite. This material was used by a private sector firm to create a "space rescue blanket" which can be used for persons in shock to prevent the loss of body heat. This product costs about \$3.00. The same material was

used for the production of a stadium blanket which retains body heat and costs between \$6 and \$8. An aluminized jacket lining for ski wear is another spin-off which costs about \$35.

Additional examples of technology utilization, according to Mr. Allen, are the following:

- a pocket rocket which produces a 5000<sup>0</sup> F. stream and cuts through metal - cost \$150 - \$200.
- a cooking pin which will cook meat in half the time - cost \$10.
- a jet cord which when ignited will sever a steel wall.
- a rescue light which can be seen in the water.
- a money identifier for the blind which works because different colors cause different signals.
- a temperature pill which is used for diagnostic purposes to detect problems in the body.
- a staple remover used for extremely heavy boxes.

Mr. Allen reiterated that all the products displayed had been developed through the use of technology from the aerospace industry or NASA. He urged participants to take advantage of the free search available through this conference.

He explained that all of NASA's contractors must report new technology, new inventions and new breakthroughs. These are reviewed through channels and then become documents which are available to the public.

Mr. Allen concluded by telling participants that the transfer of technology sustains NASA as an agency and that the minority businessman should utilize the free search service for applications to their own companies.

The final morning presentation was given by Mr. Gene Shook of the Office of the Patent Counsel at Lewis Research Center.

NASA Patents and Licensing - Mr. Gene Shook

Mr. Shook began by explaining that in 1958, Congress wrote the Space Act which dealt with the subject of inventions and patents. The act covered all fields of technology and the granting of licenses for the practice of any person for any invention.

Mr. Shook said that NASA wishes to get information to companies who desire patent items for marketing. He stressed that both NASA and private industry benefit from this process.

One method of determining the availability of patents, according to Mr. Shook, is through the NASA Technical Information Service (NTIS) which can supply copies of patents. If the private sector firm finds a patent which would be useful to their business, they can then contact either NASA headquarters or the center which controls the patent to apply for a license to use the patent.

Mr. Shook then explained that there are two types of NASA licenses, exclusive and non-exclusive. Exclusive licenses limit a product or process for the use of the licensee, while non-exclusive licenses can be used by many persons.

In order to receive a license, the applicant must provide information regarding the capabilities of the firm. Small or minority firms get special consideration when applying for a patent; firms in economically depressed areas also get special consideration.

Mr. Shook explained that there were many solar energy inventions available for licensing. He also stated that there would soon be a new agency, a Technology Center, to house all Federal Research and Development Information. He stressed that every space project benefits society seven times over.

Mr. Shook ended the formal portion of his presentation by stating that minority firms will be of great benefit both to the economy and to the society. He then opened the floor to questions.

The first questioner asked how long it took for a license to be approved. Mr. Shook answered that it ranged from one month to six weeks, assuming that all information regarding capabilities was received. He again stated that on a value judgement, small firms would be preferred.

Another participant asked the duration of the patent. Mr. Shook explained that it was a minimum of three years and an average of five. Fifteen years duration would be an exceptional case, and seventeen years is the life of the patent.

A minority businessman asked if special treatment is given for an exclusive license application. Mr. Shook explained that a small business would definitely be preferred if it were capable.

Mr. Walter Sanderson, a participant, explained that he was looking for an item to produce and hit the market with. He said that NASA can direct the minority businessman to the proper place for answers on marketing in addition to introducing items to be produced.

Mr. Ray Gilbert explained that NASA realizes the lack of minorities involved in technical businesses. He indicated that NASA will help a



company financially in utilizing technology if the company can prove that the technology is significant and fulfills a public need. NASA is anxious to help the minority businessman.

Mr. Gilbert stated that in Chicago, there is a kind of triangular network for assisting minorities in utilizing technology. NASA can provide the technology, OMBE can direct the businessman to funding sources, and Sears has provisions for the market analysis of products through its network of stores. If the analysis indicates a successful sales potential, then Sears will back it.

A participant asked how to "get his foot in the door" at Sears. Mr. Gilbert replied that he should contact Mr. Dave Vega of the Chicago OMBE office, who would start the wheels in motion for marketing the products.

Mr. Gilbert then adjourned the meeting for lunch.

#### Luncheon Presentation

Mr. Ray Gilbert introduced Mr. Thomas Lewis to give the luncheon address. Mr. Gilbert stated that Mr. Lewis was 39 years old and had been President of the Southside Bank since 1973. When he took over the position, the bank had 7 million dollars in assets. In the last two years, this has been raised to \$24 million in assets.

He grew up and received his early education in Chicago, went to Kentucky State for his higher education, then returned to Chicago. Mr. Gilbert explained that Mr. Lewis had travelled through Africa to promote world trade.

Mr. Gilbert then presented Mr. Lewis to the audience.

Luncheon Speaker - Mr. Thomas P. Lewis, President, Southside Bank

Mr. Lewis began by indicating that many people in the audience had struggled for many years and he understood their feelings. He explained that he wanted to spend a few moments giving his thoughts on the American economy as it applies to minorities.

Mr. Lewis began by giving a history of the socio-economic status of blacks in the United States. He stated that slavery in America was widespread in the 17th and 18th centuries, and was legally abolished in 1896. However, Mr. Lewis contended that slavery really continued until 1968, although it was continued with some discretion.

Mr. Lewis explained that although the Industrial Revolution began in 1830, and the railroad system established in 1834, it actually wasn't until the late 1800's that slavery began to be non-productive because of the invention of the cotton gin.

Mr. Lewis then moved to more recent historical events. He explained that there were four successive recessions during Eisenhower's administration, and that minority development was quite negatively effected by this. Before this period, many minorities had been living in public housing and their children were raised without hopes and dreams. Through the 50's and 60's the space age was born, and minorities were again excluded.

Although the Civil Rights Era did bring about some changes, by 1969 and 1970 the country had moved out of the Civil Rights Age. According to statistics, from 1969 - 1975 Blacks accounted for 50% of the unemployed in Illinois, and because of the flat economy which is expected to last for the next few years, the future does not look bright.

Mr. Lewis described the present era as being the age of multi-national corporations, a more global view of life, and a more socialistic state, which is attempting to share the good with all. This conference, according to Mr. Lewis, is an example of the government's attempts to share the wealth.

Mr. Lewis advised the audience that they must learn to do business with major white American corporations in order to survive. One method of accomplishing this is to file a class action suit against businesses which do federal contract work and are not giving enough business to minorities. He contended that even companies like Sears, who are complying with regulations, do use subjective tests which are not continually fair.

Mr. Lewis feels that America's vast resources have not been used to the advantage of minorities. Black businessmen feel that they have no hope of building a great company. America must utilize the talents and resources of its minorities if it wishes to be truly successful.

Mr. Lewis said that he had traveled throughout Africa, and that the Africans are taught that Black Americans are nothing. Thus, these third world countries have no desire to do business with the United State. Eventually, these countries will have to turn to some outside power, and the United States should consider these facts now.

Mr. Lewis concluded that at this point in history, Black children cannot understand why Black men are not successful. This is a problem which the United States must consider carefully.

## Afternoon Program

### The Industrial Applications Center System

Dr. Robert Shriner, Director of the Aerospace Research Applications Center (ARAC) began the afternoon program by outlining the purpose and services of ARAC. He related to the participants that in 1963 ARAC was formed as a joint venture by NASA and Indiana University. He explained that ARAC's facilities include information files and a staff of scientists and engineers who can solve business problems. Dr. Shriner then introduced the staff of ARAC who would be available to participants during the conference. This included: Frank Watts - Mechanical Engineer, Shirley Cordes - Staff Chemist, Fred Gaspar - Electrical Engineer, Thor Semlar - Director of Technical Services, and Joe DiSalvo - Director of Industrial Services.

Dr. Scriner continued by enumerating the four types of services provided by ARAC.

1. Technical assistance in problem solving.
2. Current awareness services which keep people abreast of current technology.
3. Assistance in obtaining documents or technical reports.
4. User training and assistance in using the scientific services.

Dr. Shriner then showed a short film called "Partners with Industry" which illustrated new products which have been developed through technology.

The movie exemplified technology use by private industry. The first illustration in the film was the use of technology in developing the heat line pipe in Alaska. This development saved in excess of 100 million dollars and provided a viable answer to Alaska's energy needs.

The Pullman-Standard Company needed an analysis of their freight cars for improvements and NASA facilities provided solutions.

A new pacemaker has been developed through an enormous investment by NASA. This pacemaker has distinct advantages over the older types in that it has a life of 10 to 20 years, is rechargeable, and has the advantage of a small size.

In addition to this type of innovation, products such as oversize kites have been developed in conjunction with the NASA space program.

The film ended by stressing that NASA is eager to provide information from its data banks in order that the private sector might benefit from the results of technology. In this way, the United States will accept the challenge to reach its full potential.

Dr. Shriner then introduced his colleague from ARAC, Mr. Thor Semlar, Director of Technical Services, to discuss and show slides illustrating the method by which a client uses ARAC services.

#### Mr. Thor Semlar - ARAC Services

Mr. Semlar's presentation graphically showed how several clients had benefitted from the ARAC service.

The first business which approached ARAC for assistance was a client with an equipment problem. The problem was causing a failure rate of one per day, and eventually an electrical device exploded. ARAC analyzed the problem and suggested a design change which modified the device and saved the company over \$100,000 per year.

The second company depicted in the slides was a waste disposal business. Their problem involved a burner which was unable to process. ARAC initiated

a search of the NASA file to come up with a new burner with reduced temperatures. .

The Duncan Electric Company approached ARAC for suggested design modifications. ARAC's innovations saved them approximately \$100,000.

Mr. Semlar stated that often this type of research costs over \$750. However, the participants at this conference would have the opportunity to discuss their problems and initiate a search free of charge.

Mr. Semlar ended his presentation by directing the participants to the various workshops: Chemical Processing, Electronics and Electrical Problems, Mechanical Systems and Metallurgical and Materials Problems.

### Technology Utilization Workshops

The workshops at the Chicago conference were conducted and organized in a different manner than the workshops at the other conferences in the series. At each of the other four conferences, workshops were managed as group sessions with presentations and question and answer periods.

At the Chicago seminar, the technical personnel from ARAC planned their workshops to be conducted as individual counselling sessions. Six technical experts from the ARAC staff provided counselling about individual business interests and problems to the participants at the conference. Three basic workshops were established: Chemical/Plastics, Electronics and Electrical Systems, and Metal Working/Machining/Mechanical systems. Each of the workshops was manned by one staff member expert in the field, and one generalist. In this way, both participants in the aforementioned fields and participants with interests other than those formally mentioned were adequately serviced.

Each minority businessman had the opportunity to discuss his interests with a technical staff member. Some participants had prepared questions on specific problems and were able to discuss these problems at length with the expert of their choosing. Others had less specific requests, but were able to discuss the nature of the service and possible areas of interest.

It is assumed that searches will be initiated for those participants who had already conceived their questions, and that numerous other participants, having been informed of the service, will be interested in following up their general curiosity with more pointed questions related to their businesses.

#### IV. EVALUATION

##### Evaluation Questionnaires - Results

Participants who responded to the evaluation questionnaire distributed at this conference were quite positively impressed by both the preparation and program of this seminar.

The invitational procedures which have been developed through the experience of this series of conferences were judged by Chicago participants to be clear and informative. 95% of respondents found the invitation clear; 17 participants found the information sufficient, while only 2 participants thought there should be more information. In assessment of the telephone follow-up of the written invitation, 15 respondents regarded the call as helpful, while 4 participants considered it unnecessary.

The lead time of the invitation procedure, which the contractor has judged to be most successful, was unanimously affirmed by the participants; 100% of respondents found advance notice to be sufficient; none judged it too short or too long.

The Illinois Institute of Technical Research received high ratings as a facility for the conference. 95% of the participants considered the facilities excellent, the remaining 5% judged them to be good. 100% found the location to be convenient.

The holding of the conference on a weekday was judged inconvenient by only one respondent, the remaining found the date convenient.

The participants' responses to questions regarding the nature of the program and specific portions of the program indicated a high degree of interest and a positive reaction to the program's intent and goals. Reacting



to the Technology Utilization Workshops, 100% of respondents found workshop personnel knowledgeable and the information disseminated to be helpful. 90% found the materials distributed at the workshop relevant. 92% indicated that their questions were answered sufficiently. Overall, 57% rated the workshops excellent, and 43% rated them good.

The luncheon speaker was well-received by the minority businessmen. 76% judged the presentation excellent, 24% judged it good, none judged it poor.

Participants were also asked to judge which sections of the program should be expanded. Those businessmen who responded felt the program should be expanded as follows:

Commercial Application of Space Technology	- 5
NASA Patents and Licensing	- 4
The Industrial Applications Center System	- 4
Technology Utilization Workshops	- 9

Many participants at the conference made either verbal or written comments and suggestions concerning the program. Several areas of interest were stressed, as follows:

#### ON THE CONFERENCE:

"In general, very interesting and informative. Has been a pleasure!"  
"All sections of program very good."  
"This conference was excellent for people in manufacturing. For sales, the workshops did not help me."  
"More time should be given to clients in asking and answering questions pertaining to their business."

#### ON EXPECTED WORKSHOP FOLLOW-UP

"Expect means of obtaining direct answers to specific questions."  
"Cannot rate the workshops at this time. Information is given for subsequent consultation."

#### ON THE PROGRAM

- "Information on funding if possible would be helpful."
- "Should attempt to do direct business with guest by procurement office as soon as possible."
- "Minority companies should be on NASA mailing list for technology data."
- "Have your program better known - our company did not know such help existed."
- "Plans should be made to contact more Black businesses in the Milwaukee area."

The numerous subjective comments made by the businessmen in conjunction with the objective data gathered from the questionnaires indicate that participants in Chicago showed a high degree of interest in the program.

RESULTS OF EVALUATION QUESTIONNAIRE

DISTRIBUTED AT

CHICAGO TECHNOLOGY UTILIZATION CONFERENCE  
October 21, 1975

1. Invitation Clarity	Good	<u>19</u>	Poor	<u>1</u>
2. Invitation Information	Sufficient	<u>17</u>	Should Have More	<u>2</u>
3. Telephone Invitation Follow-Up	Helpful	<u>15</u>	Unnecessary	<u>4</u>
4. Conference Location	Convenient	<u>19</u>	Inconvenient	<u>    </u>
5. Weekday Conference	Convenient	<u>18</u>	Inconvenient	<u>1</u>
6. Advance Notice	Sufficient	<u>19</u>		
	Too Short	<u>    </u>		
	Too Long	<u>    </u>		
7. Conference Facilities	Excellent	<u>19</u>		
	Good	<u>1</u>		
	Poor	<u>    </u>		

Please Circle Technology Utilization Workshop which you attended:

- A. Workshop I - Chemical/Plastics
- B. Workshop II - Metal Working/Machining/Mechanical Design
- C. Workshop III - Electronics and Electrical Systems

8. Workshop Personnel	Knowledgeable	<u>14</u>	Uninformed	<u>    </u>
9. Workshop Information	Helpful	<u>14</u>	Irrelevant	<u>    </u>
10. Workshop Materials	Relevant	<u>9</u>	Irrelevant	<u>1</u>
11. Were questions answered	Sufficiently	<u>12</u>	Insufficiently	<u>1</u>
12. Workshop Rating	Excellent	<u>8</u>		
	Good	<u>6</u>		
	Poor	<u>    </u>		
13. Luncheon Presentation	Excellent	<u>13</u>		
	Good	<u>4</u>		
	Poor	<u>    </u>		

14. Which sections of the program do you feel should be expanded?  
(Circle your choices)

- A. Seminar Objective
- B. Commercial Application of Space Technology - 5
- C. NASA Patents and Licensing - 4
- D. The Industrial Applications Centers System - 4
- E. Technology Utilization Workshops - 9

### Evaluation Questionnaire - Comments

A number of conclusions can be drawn from the results of the evaluation questionnaire in addition to contractor's observations and verbal comments made by participants.

The invitational procedures, information, and timing which have been developed and utilized throughout the series were uniformly judged successful. At this conference, four participants judged the telephone follow-up as unnecessary which indicates that the written information was clear and sufficient for a number of participants. However, because 15 participants judged it helpful and several participants mentioned to the contractor that it had caused them to attend, it is recommended that the follow-up process is a necessary and helpful method of recruiting attendees.

On specific issues, the workshops were given high marks, however, the overall ratings showed that 43% found them good, and 57% found them excellent. This data in conjunction with the contractor's observations indicates that a more group-oriented format is generally better received. Because of the unusual facilities of the Aerospace Research Application Center, their decision to manage the workshops as individual consultation sessions seemed to be warranted. With all other factors being equal, however, it seems that the group sessions are generally better received.

The facilities for the conference were excellent and although several logistical arrangements were necessary to facilitate the participant's movements, the Illinois Institute of Technology was generally an outstanding site.

The program itself received high ratings and the participants expressed the highest degree of interest in the "meaty" portions of the program. Since a large percentage of the attendees had a high degree of technical capability, it is expected that their interest in the program should produce a number of transfer possibilities.

## V. CONTRACTOR'S OBSERVATIONS AND COMMENTS

The minority businessmen who attended the Chicago conference were well-qualified and highly capable of utilizing the services offered. The proceedings were animated with many businessmen asking questions and prepared to take advantage of the program. The interest displayed was of a high level, and if the program is followed up effectively, there is excellent potential for transfer to a number of businesses in the Chicago area.

The preparation for the Chicago conference proceeded smoothly. The OMBE office in Chicago was extremely helpful in facilitating the procurement of mailing lists. Most of the OMBE funded organizations were sincerely interested in the program, and although they lamented the lack of minority technical businesses in the area, they were extremely interested in providing the names of all companies of which they were aware.

The Illinois Institute of Technical Research was an excellent site. The personnel showed great interest in the program and provided able and efficient logistical assistance. Their interest in providing the best possible service for this conference greatly eased the task of logistical arrangements.

The percentage of agency personnel to participants was extremely high at this conference. Thirty-eight minority businessmen participated, and twenty-three agency personnel attended. This situation offered a good potential for one-to-one interaction between businessmen and government personnel. Although a number of government personnel utilized the situation and made sincere efforts to interact with participants, others did not take advantage of the opportunity. It is suggested that this type of setting is tailor-made to raise the credibility of the government's desire to aid

minority businessmen, and it would be well worth the agency people's efforts to use the situation effectively.

The workshops were conducted as individual consulting sessions because the IAC in the region contended that this method would best use their particular facilities. Although participants were impressed with the degree of knowledge of the technical personnel, and the businessmen who attended the workshops were well-serviced, it is recommended that a group approach be reinstated. Logistical difficulties in the individual approach include the necessity of participants waiting for consultation and the subsequent loss of businessmen who do not have the time to stay. Although the individual approach has some very effective positive results, the logistical arrangements for this type of conference necessitate a group workshop, and a group orientation will generally be more successful.

The high quality of minority businesses present, the ease of preparation, the excellence of site facilities, the helpfulness of contact personnel in the Chicago area, and the high degree of interest in the program by participants are the factors which, when combined, produced an extremely successful Chicago Seminar.



## APPENDIX VI

Atlanta Technology Utilization Conference

Held November 18, 1975

Internationale Hotel

## TABLE OF CONTENTS

I.	PREFACE.....	1
II.	PREPARATION.....	2
	A. Recruiting Minority Businessmen.....	2
	B. Site.....	3
	C. Agenda.....	3
	D. Agenda Participants.....	3
	E. Formal Invitation.....	3
	F. Follow Up and Final Preparation.....	4
III.	CONFERENCE.....	5
	A. Attendance and Profile of Attendees.....	5
	B. Proceedings.....	6
	1. Welcoming Address.....	6
	2. Program Introduction.....	6
	3. Commercial Application of Space Technology.....	7
	4. NASA Patents and Licensing.....	8
	5. Luncheon Address.....	9
	6. Industrial Applications Center System.....	11
	7. Technology Utilization Workshop.....	14
IV.	EVALUATION.....	15
V.	CONTRACTOR'S OBSERVATIONS AND RECOMMENDATIONS.....	21

## I. PREFACE

The Atlanta Technology Utilization Seminar held Tuesday, November 18, 1975 at the Atlanta Internationale Hotel represented the culmination of this series of conferences. Every process which has been developed throughout the series to insure successful conference activities was utilized to produce the Atlanta Conference. The result was that the Atlanta Seminar might be judged, by many standards, to be the most successful.

Although the actual number of participants was not the largest, the turn-out ratio was outstanding among the six. 90% of invitees who confirmed reservations turned out for the conference. The Atlanta area does not have huge numbers of minority technical businesses, but the businesses there were of high quality and exhibited a great degree of interest in technology transfer.

The program was extremely well received and most participants were impressed by the opportunities presented. There was an unprecedented degree of interaction between minority business participants and agency personnel which bodes well for future follow-up potential.

It is suggested that the Atlanta Conference be considered a model of a successful method of disseminating technology utilization information. The companies present were capable and enthusiastic, the technical and support personnel functioned as active participants, and the concentrated program accomplished its purpose without an excess of presentations. It is expected that the relationships established with the minority technical business community in Atlanta will prove to be fruitful and enduring.

## II. PREPARATION

The Atlanta Seminar was planned and organized using the techniques and formats which had proven most successful in producing past conferences. Recruiting methods, invitational procedures, agenda planning, and site logistics were prepared using the most effective working methods.

The recruitment processes were initiated by the contractor during his site visit. A number of minority support organizations, including the Regional OMBE Office, were contacted to provide input on possible minority technical business participants. The contractor was informed by many of the local contacts that the turn out would be relatively small, as there were not many technically oriented minority firms in the area. However, most of the organizations expressed sincere interest and enthusiasm about the program and offered all possible assistance. Many organizations provided their mailing lists, and the following lists were screened to determine potential participants:

"Survey of Georgia Minority Businesses"  
"Atlanta Minority Business Directory" -  
Interracial Council of Business Opportunity  
"Directory of Minority Businesses in the Greater  
Chattanooga Area" -  
OMBE, Chattanooga Chamber Foundation  
Chattanooga Area Business Resource Center  
"Vendors Directory" - Atlanta Business League  
"Minority Business Directory - Talbotton, Georgia" -  
The Federation of Southern Cooperatives  
"National Business League - Chattanooga, TN"  
"The Talbotton Business Development Office"  
Marshall Space Flight Center - Procurement Office

In addition, MESBICS in the area and a number of technical and university personnel were contacted for their suggestions. All lists and suggestions were screened, and the final mailing list consisted of 57 firms throughout the southeastern region.

During the site visit, the contractor considered a number of government facilities, universities, and hotels for the conference. The site chosen, the Atlanta Internationale Hotel, embodied a number of positive aspects. The logistical arrangements were good, the price for participants was reasonable, and the hotel is minority owned and operated. The combination of these factors rendered the Atlanta Internationale an ideal site.

The agenda format retained the successful structure of the Boston, San Francisco, and Chicago conferences. Since the North Carolina Science and Technology Research and Applications Center had access to an on-line terminal, it was determined that this method would be used for the Technology Utilization Workshops.

The use of this terminal at the San Francisco Workshop had proven to be interesting and informative to participants. The practical, compact and working emphasis of the program remained unchanged. Agenda participants were contacted and confirmed, and a tentative agenda was drafted.

The formal mail-out process proceeded utilizing the two phase formal invitations which explained and promoted the conferences. All invitees were contacted by phone to elicit possible questions and to further describe the seminar. After all potential participants were contacted, the 20 firms who had confirmed their attendance were sent letters of confirmation.

The Atlanta OMBE Office was of valuable assistance in this phase of preparation. Their name had been included in the invitation packets as the local contact on the conference. They were contacted by many invitees, and because of their interest and support of the conference, they were extremely capable of explaining the opportunities available through the seminar.

The final phase of the conference preparation was expanded for this conference. Because of the low number of confirmations, it was possible to call each of the businessmen on the day preceeding the conference to remind him of the seminar.

The agenda was finalized, materials were prepared, and the NASA display was set-up. A conference information center was established at the Atlanta Internationale Hotel on Monday, November 17, 1975. Luncheon arrangements were finalized, and the site was prepared for the conference.

### III. CONFERENCE

#### Attendance and Profile of Attendees

Eighteen minority technically oriented firms were in attendance at the Atlanta Technology Utilization Conference held November 18, 1975, at the Atlanta Internationale Hotel. Several companies had more than one representative at the conference, which brought the total number of minority businessmen to twenty-two (22). Since twenty (20) firms had confirmed their reservations for the conference, the percentage of turn-out was 90%. This compares extremely favorably to former conferences in which the average turn-out was approximately 50%. It is also extremely high relative to the number of technically oriented minority run businesses in the region.

The technical capability of these firms was also at a high level. Over 50% of the firms had sales volumes of over \$250,000. Five firms indicated that their sales volumes were over \$500,000. The average number of employees, twenty-four (24), was very high for minority technical firms. Four firms showed employment figures of 47, 65, 80, and 100 respectively.

Some minority business participants travelled as far as five hours to attend this conference. There were representatives from South Carolina, North Carolina, Tennessee, and Florida in addition to businesses from the Atlanta Metropolitan area. The number of minority firms present and their degree of capability indicated that recruitment for Atlanta was outstandingly successful.

### Conference Proceedings

The conference was convened by Mr. Charles McMillan of the Atlanta OMBE Office who offered some short welcoming remarks.

### Welcoming Address - Mr. Charles McMillan

Mr. McMillan welcomed the participants to this conference which was being co-sponsored by NASA and OMBE for the purpose of expanding opportunities for minority businessmen. Mr. McMillan explained that this conference would introduce the participants to new business opportunities through exposing them to NASA's technical resources. He stressed that the term "minority business" is a nebulous and indefinite nomenclature, and that it should be replaced by the term "disadvantaged business". Mr. McMillan concluded by stressing that participants should take advantage of the opportunities available through this conference.

--

### Program Introduction - Mr. Ray Gilbert

Mr. Gilbert offered the participants a brief background on this series of conferences. He explained that there had been five thus far and that this was the final conference in the series. He noted that the program was experimental and developmental, attempting to discover the best method of transferring technology to the minority businessman. Minorities are not in technology, according to Mr. Gilbert, and in order to enter the mainstream of American business they must tap this resource. Without it, they are at an extreme disadvantage.

Mr. Gilbert noted that in order for minority businesses to truly develop, about \$500 billion is needed in Federal Aid.

He explained that this program was meant to give the minority businessman



access to a "data bank" of information from which he might obtain potential new products, processes, or techniques. Mr. Gilbert concluded by stating that this conference was held to promote minority business development through technology transfer.

#### Mr. Chuck Kubokawa - Commercial Application of Space Technology

Mr. Kubokawa's presentation was an exhibition of some examples of NASA's technology which have been commercially marketed. The participants were able to view these products through Mr. Kubokawa's use of slide show.

Some products which were displayed were foam cushioned seats which improved the safety of air travel, thermal materials which have been used in blankets, jackets, and rescue operations, a bra which can detect breast cancer through sensitization to heat, and a pill which can be used to regulate body temperature.

Mr. Kubokawa explained that many products and techniques which have been developed for the space projects have good commercial applicability. He stated that the public has the impression that NASA receives massive funding from the federal government. However, this year NASA is at the bottom of the list for aid.

Mr. Kubokawa concluded by introducing Mr. Harrison Allen, Jr. to continue the presentation on applications of NASA Technology.

#### Mr. Harrison Allen, Jr. - Commercial Application of Space Technology

Mr. Allen exhibited a number of products which have been developed utilizing space technology.

These included:

- space blankets and coats for heat control
- a temperature control pin
- a strobe light
- a cutting torch using the laser beam
- flat conductor tape
- a device for money identification by the blind
- a large staple remover
- a temperature pill

Mr. Allen concluded by indicated that these were only some examples of utilizing NASA technology. There is much technology in NASA's data banks which can be utilized on the commercial market. Mr. Allen urged participants to take advantage of the opportunities afforded them by the search service.

#### Mr. Leon Wofford- NASA Patents and Licensing

Mr. Wofford, the Chief Patent Counsel at Marshall Space Flight Center, gave a presentation on acquiring NASA Patents and Licenses.

He explained that NASA grants two types of licenses, exclusive and non-exclusive. The exclusive license is granted to a single firm only, if they can prove a valid reason for exclusivity. A non-exclusive license implies that the product, process or technique involved can be used by a number of companies.

Applications for NASA Patents at Marshall Space Flight Center are reviewed by an inventions board. Minority or small businesses are given preference.

Mr. Wofford explained that the ultimate purpose of the Patents and Licensing Office is to get the products on the commercial market.

He concluded by taking several specific questions from the floor.

Luncheon Address - Mr. Joe Hudson

Mr. Ray L. Gilbert resumed the formal proceedings by introducing Mr. Joe Hudson, Executive Director and Local Vice President of the Interracial Council of Business Opportunity, to deliver the luncheon address. Before Mr. Hudson began, Mr. Gilbert introduced several members of the audience who were instrumental in producing this conference. They included; Mr. Jim Dixon of NASA's Office of Equal Opportunity in Washington, Mr. Stan Kelly of the same office, and Mr. Ted Lettes of the Office of Minority Business Enterprise in Washington.

Mr. Hudson began his talk with the thought that black business should not be considered a "social" project. Black businessmen should not be drinking at the trough of social welfare, they should be standing on their own two feet.

Mr. Hudson gave several reasons for his beliefs. One of the most important was that "social" programs are unreliable. Six or seven years ago, blacks were "in". Everyone wanted to give them money. This is no longer the case; witness the fact that bussing is such a volatile issue.

Mr. Hudson feels that there has been too much reliance on government programs. He emphasized that government programs are not bad, but the approach and methods of utilization must be altered.

Mr. Hudson suggested a number of new approaches which black businessmen

might utilize for further development. First, they must emphasize the positive nature of black business. Mr. Hudson quoted Senator Gaylord Nelson as saying that when small and minority businesses are in trouble, the whole economic base of the country is threatened. Mr. Hudson explained that small and minority businesses provide employment, taxes, and community growth. These are not social issues, they are the economic base of all growth. Black businessmen should stress these aspects of their ventures.

Another method of upgrading the black business community is the accumulation of wealth. Mr. Hudson explained that wealth has been defined as the appreciation of capital gains, intergenerational transfer, and savings. In the past, the black community has not been involved in any of these three areas. When a black did advance, it was usually in a profession. Although this is beneficial to the individual, a skill cannot be transferred from generation to generation, and thus the wealth can not appreciate. A business, however, can be inherited, and therefore the wealth will continue to remain in the family. This is why it is so important for blacks to become involved in their own businesses.

Mr. Hudson also stressed that blacks must become involved politically. If they become their own advocates, work for political parties, and pressure their politicians, then the politicians will, of necessity, be advocates for them.

Personally, each black businessman should involve himself in a number of areas for his own benefit and the betterment of the black community. First, a businessman should involve his children in his business and encourage the youth of the community to involve themselves in business projects.

Black businessmen must also become involved in the planning processes of the community because by the time a project is finalized, most business arrangements have already been made. They should belong to civic and community organizations which are another way of discovering new business opportunities. Foreign markets are also an untapped source of potential business arrangements.

Mr. Hudson urged the participants to use government programs to their advantage. Although government programs are often dismissed by minority businessmen as useless, if the proper pressure is applied, they can be used to the businessman's advantage. The government is a "reactor", that is its nature. Other potential sources of opportunity are the city, the SBA, and large white corporations. Mr. Hudson told the businessmen to "use your heads."

He also stressed that it was important to develop long range goals so that government and big business can be made aware of future potentials and needs. Needs must be concretized to prepare white business and government for the where minority business is going.

In conclusion, Mr. Hudson reiterated that the black business community must stand up and develop its own approach and developments. They should emphasize that black businessmen should be considered for business propositions not because they are black, but because they can do it.

Mr. Hudson left his audience with a reminder that "the struggle still continues."

#### The Industrial Applications Center System - Mr. Peter Chenery

Mr. Chenery began the afternoon program by telling participants that in the morning they had heard how NASA had developed the Technology Utilization Program, and now he would like to explain to them how the centers make this

technology available.

He said that he would leave search request forms for each participant and that NASA would fund one free search for each participant. He indicated that there was a 30 day limit to this offer.

Mr. Chenery's presentation was accompanied by slides which illustrated the main areas of interest. Mr. Chenery began by stating that there were many facets to the Technology Utilization Program. There are a number of methods which NASA utilizes to facilitate Technology Transfer. One way is the publication of specific informational materials such as Tech Briefs, Special Publications, and Computer Program Abstracts. Another method is through the use of Application Teams who search out problems in the public sector to which NASA Technology can be applied. The third method of technology transfer is Mr. Chenery's field, the Industrial Applications Centers. There are 6 IAC's located throughout the United States.

Mr. Chenery's Center, the North Carolina Science and Technology Research and Application Center, is located in Research Triangle Park in North Carolina which houses 25 research organizations. This center performs technology transfer functions by providing the following:

- 1 - Retrospective Searching - finding all research on a particular topic
- 2 - Current Awareness Search - keeping clients up-to-date on new developments in a particular field
- 3 - Referral Service - directing clients to the sources of unusual or special products
- 4 - Applications Engineering - adapting technology to particular program requirements
- 5 - Workshops - explaining services to specialized groups at seminars or conferences
- 6 - Documentation - finding and obtaining reports on specified topics

Mr. Chenery then described the resources which are available to clients through his center. Three basic sources are utilized: information collections, facilities and machines, and people. Some information collections are NASA Reports and Space Research, other government collections, engineering literature, and information sources on chemicals, biology, medicine, food science, water and air pollution, and textiles. All of these indexes can be searched by computer. The second source is people, and the center can contact technical personnel to deal with particular problems. The third source, facilities and machines, is covered by the center's tie-ups with other computers and facilities throughout the country.

Mr. Chenery then explained to participants how the search process works. When a client presents the center with a question, the technical personnel can utilize either manual or automated data systems to answer the question. If an automated data system is used, then key words are fed into the computer which will produce a list of abstracts of the information available on the requested topic. Full texts of relevant articles can be obtained through microfiche at the center, university libraries, or other NASA installations.

Mr. Chenery concluded by stressing that the information in the data banks represent eleven (11) years of research and \$10 billion tax dollars worth of research and development funding. He urged participants to use NASA's offer of a free search to take advantage of the massive amounts of information available.

He then introduced Mr. Bob Potter of his center who would provide technical information at the workshop.

### Technology Utilization Workshop - Mr. Pete Chenery and Mr. Bob Potter

The Technology Utilization Workshop was originally planned to center on the use of an on-line terminal to demonstrate search methods. However, the terminal failed to connect and therefore a more informal question and answer period was arranged. The moderators gave individual responses to each participant concerning their specific problem areas. They encouraged participants to follow-up this initial contact by initiating the in-depth search request to receive specific and utilizable information.

A sampling of the questions which were raised at the conference included the following:

1. Q - How can I overcome the problems involved in producing liquid asphalt?  
  
A - The moderators indicated that this question would be best handled by searching the information of a petroleum association which would provide a detailed response.
2. Q - Is there any new technology for fabrication of printed circuit boards?  
  
A - The moderators indicated that NASA would be the best source for this information. The client should initiate a computer search to receive the latest and updated information in the areas of PCB's.
3. Q - What kind of information is available on textiles?  
  
A - The moderators responded that there is a great amount of expertise on this topic and the client should formulate a specific question.

During these individual sessions, Mr. Gilbert reiterated that participants had 30 days to initiate their free search. The conference broke up into individual consultations between agency personnel and businessmen. After all businessmen had the opportunity to discuss their interests, the conference was adjourned.



#### IV. EVALUATION

##### Evaluation Questionnaire - Comments

The eighteen minority technical firms who attended the Atlanta Technology Utilization Conference were extremely interested and enthusiastic toward the program. Those participants who commented either verbally or on the evaluation questionnaire were extremely positive in their reactions to the program.

The structure and content of all phases of conference activity, including invitational processes, the agenda format, and the program information have been honed throughout the series. The results of the Atlanta Conference indicate that the format which has creatively developed and expanded through this series has proven to be a successful concept.

The reaction of participants to pre-conference preparation was generally quite positive. The promotional invitation materials were well-accepted by minority businessmen, and most of them indicated that they received sufficient and understandable information. The responses to the evaluation questionnaire indicate that the telephone invitation follow-up is a necessary adjunct to the formal mail-out, and many participants verbally expressed that this phone call was the deciding factor in their attendance. The one month lead time on the first invitation was also judged to be a productive interval between first contact and conference.

The site was found to be a good location for most participants, and the weekday conference was a convenience for most businessmen. The two participants who judged both of these factors inconvenient had come from Nashville, Tennessee for the conference, and later indicated that "it was worth the five hour drive

from Nashville to Atlanta".

Participants were impressed with the agenda and the conference activities, and generally indicated that they had high hopes for the potential of the Technology Utilization Program. The only minor problem on the agenda was a technical difficulty; the on-line terminal which was the focus of the technology utilization workshop did not function. However, the responses to the evaluation questionnaire indicated that participants were nevertheless impressed by the workshop personnel and the scope of information available. Many of them expressed the opinion that the follow-up to the workshop, the searches, would be the significant factor in determining the utility of the program to their particular firm.

The luncheon speaker was very well-received by the businessmen; his choice of topic and approach seemed to be interesting and effective to his audience.

The most popular section of the program, according to those participants who indicated their choices for expansion, was the commercial applications of space technology. All other items received at least one vote. At this conference as in the past, participants were most impressed by those aspects of the seminar which provided the most concrete and applicable information.

In considering both the evaluation responses and numerous comments made at the conference, the businessmen in the Atlanta region perceived of the seminar and the TU program as an extremely valuable tool. Participants were impressed by the interest of participating agency personnel, and the practical possibilities which the conference engendered. The very warm reaction of businessmen to this program might be summarized in the words of one participant,

"If follow-up comes, this seminar will have satisfied and made up for two years of frustration".

## RESULTS OF EVALUATION QUESTIONNAIRE

DISTRIBUTED AT

ATLANTA TECHNOLOGY UTILIZATION CONFERENCE  
November 18, 1975

1. Invitation Clarity	Good	11	Poor	0
2. Invitation Information	Sufficient	10	Should Have More	1
3. Telephone Invitation Follow-Up	Helpful	9	Unnecessary	1
4. Conference Location	Convenient	10	Inconvenient	1
5. Weekday Conference	Convenient	9	Inconvenient	2
6. Advance Notice	Sufficient	10		
	Too Short	1		
	Too Long			
7. Conference Facilities	Excellent	6		
	Good	5		
	Poor	0		

Questions 8 - 12 Rate the Technology Utilization Workshop:

8. Workshop Personnel	Knowledgeable	11	Uninformed	0
9. Workshop Presentations	Helpful	10	Irrelevant	0
10. Workshop Materials Coverage	Relevant	11	Irrelevant	0
11. Were Questions Answered	Sufficiently	11	Insufficiently	0
12. Workshop Rating	Excellent	7		
	Good	3		
	Poor			
13. Luncheon Presentation	Excellent	8		
	Good	3		
	Poor	0		

14. Which sections of the program do you feel should be expanded?  
(Circle your choices)

A. Seminar Objective	1
B. Commercial Application of Space Technology	5
C. NASA Patents and Licensing	3
D. The Industrial Applications Centers System	2
E. Technology Utilization Workshops	2

## Evaluation Questionnaire - Results

The responses and comments elicited by the evaluation questionnaire were more consistently positive than any other conference in the series.

Reacting to the invitational process, 100% found the invitation clear, and over 90% felt that sufficient information was provided. 90% indicated that their decision to attend the conference was assisted by the telephone follow-up call. Similiarly, over 90% of the respondents judged that the advance notice for the conference had been initiated at precisely the right time.

In reference to the site and date of the conference, 9 out of 10 were pleased with the location, while 9 out of 11 participants who responded to the question found the weekday to be a convenience. Over half of the participants rated the site as excellent. the remainder considered it good.

The workshop session, although plagued by a non-working terminal, was almost unanimously approved. 100% of respondents indicated that workshop personnel were knowledgeable, the presentation was helpful, materials were relevant, and questions were answered sufficiently. 70% rated the workshop excellent, 30% considered it good.

Most participants were also very impressed by the luncheon speaker. 73% judged his presentation to be excellent; 28% judged it to be good.

Opinions were solicited on which sections of the program should be expanded. Of those who responded, the results were:

Commerical Application of Space Technology	----- 5
NASA Patents and Licensing	----- 3
The IAC Center System	----- 2
Technology Utilization Workshops	----- 2
Program Introduction	----- 1

Participants were also asked to express any additional thoughts or suggestions. Several, businessmen commented as follows:

"I want to thank NASA for this conference, excellent seminar, very helpful. I look for more. They can be very beneficial to the community."

"Computer terminal failed. Would have been big help."

"It has been my finding that most minority firms are not technically oriented. Therefore dealing with NASA (a basically technical agency) must progress through cautious, elementary steps so as to utilize all that is available. Also so that this relationship is not jeopardized."

"If follow-up comes, this seminar will have satisfied and made up for two years of frustration ...worth the five hours drive from Nashville to Atlanta."

"Very well pleased and impressed with contacts."

The responses to the evaluation questionnaire have become increasingly more positive as the series has progressed. The format developed, finalized, and utilized for these seminars has been well received by minority businessmen and has proven to be a viable methods of disseminating technology utilization information.

## V. CONTRACTOR'S OBSERVATIONS AND COMMENTS

The Atlanta Technology Utilization Conference was the final and culminating conference in the series. It may be viewed as the most successful seminar for a number of reasons.

The turn-out for this seminar was outstanding. 90% of the companies which confirmed reservations actually attended. This compares to an average of 50% for all the other conferences. The number of technically capable minority firms in attendance was very large relative to the number of these firms extant in the region.

The excellent turn-out and the high level of the firms in attendance may be attributed, in part, to the outstanding cooperation and support provided by local contact organizations. The interest and enthusiasm of the local organizations was communicated to the minority businessmen in the region, which may partially account for the success of this venture.

The participants at the conference reacted very favorably to the program activities and information. Most felt that the TU program could be extremely useful to their firms and indicated that they intended to do serious follow-up work.

The ratio of participants to agency personnel was about 2 to 1. This ratio worked particularly favorably at this conference because the agency personnel were constantly interacting with participants. This kind of open communication is extremely beneficial for both parties. As one participant stated, he was "very well pleased and impressed with contacts."

The Atlanta conference may be considered a prototype of a successful method of disseminating technology utilization information. A very high percentage of the technically capable minority firms in the region were present. The compact, concentrated, "working" program functioned as a

motivating force for these firms to follow-up their initial contact. The cooperation exhibited by the local contact personnel and the interaction of the government representatives with the private sector minority businessmen served to increase the participant's interest concerning the program. All aspects of preparation, conference activity, and conference personnel worked together to produce an extremely successful and valuable program.



APPENDIX VII

FORMAL INVITATIONS

HOUSTON TECHNOLOGY UTILIZATION CONFERENCE

February 27, 1975

FORMAL INVITATION

February 6, 1975

Dear Sir:

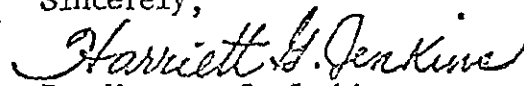
As the result of an extensive search of your geographical area, your firm has been identified as a minority business which can potentially benefit from the addition of technological and managerial advances. You are cordially invited to represent your firm at, or send a representative to, the Technology Utilization Conference to be held February 27, Thursday - at Johnson Space Center near Houston, Texas. The conference is being jointly sponsored by the National Aeronautic and Space Administration (NASA) and the Office of Minority Business Enterprise (OMBE).

The purpose of this conference is to provide the opportunity for minority businessmen to become familiar with the valuable technological and managerial information that research and development programs have amassed. The information stored in NASA computer memory banks covers thousands of topics, and no doubt there is information directly related to your business.

At this conference you or your representative will have the opportunity to discuss your business problems with a NASA resource technician, who will then assist you in initiating a computer search for information relating to your business problems. When the search is completed you will be mailed a computer read out listing information resources that deal with your specific technical and/or managerial problem. Computer time necessary to conduct this search is both expensive and valuable, but not as valuable as the information it leads you to. For purposes of this conference no charges will be made for this service.

Come to the conference and find out how NASA technology and information can help your company turn your technical problems into profits, your ideas into products and your products into sellers.

Sincerely,



Dr. Harriet G. Jenkins  
Assistant Administrator for  
Equal Opportunity Programs

P.S. See the enclosed information for more detail on all aspects of the conference.

REPRODUCIBILITY OF THE  
ORIGINAL PAGE IS POOR

February 6, 1975

Dear Conferee:

InterAmerica Research Associates welcomes you to the Technology Utilization conference at the Johnson Space Center and looks forward to serving as your host. In order to facilitate your travel arrangements and in order to answer whatever questions you might have with respect to this conference we have included this logistics package detailing some useful information.

The conference will be held on Thursday February 27, 1975 at the NASA space facility just outside of Houston. Conference activities will occur at the Gilruth Center which is centrally located on NASA grounds.

For your convenience we have contacted the Ramada Inn located at 2020 NASA Blvd., and have tentatively reserved lodgings for all conference participants. If you wish to confirm a reservation call Ramada Inn toll free 800-228-2828.

Ramada Inn, in addition to being conveniently located, is very inexpensive. A single at the Ramada will cost you \$11.00 per night. The Ramada Inn is just across the street from the NASA entrance and we will provide you bus transportation from the Inn to the Gilruth Conference Site if you wish it. You may drive your car directly to the center if you wish.

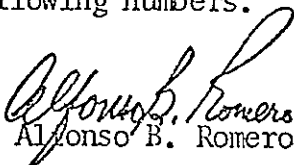
Once at the Ramada, or once you are in the Houston area you can call 713-483-4831 during office hours for specific information. Before or after office hours call 713-332-3551. Ask for Mr. Carlos Correa or Mr. Al Romero.

Should you fly into the Houston area we suggest you fly Southwestern, and that you fly late Wednesday evening prior to the conference. Evening rates are substantially reduced. (Remember - all conference expenses are business expenses for income tax purposes.) Southwest flies out of Dallas every hour on the half hour into Houston -Hobby airport. San Antonio flights to Houston depart four times daily: 7:30, 11:30, 4:30, & 7:30. From Hobby airport take the Galveston Limousine service directly to the Ramada Inn.

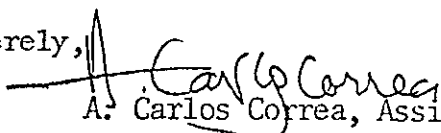
If you are traveling by car come via Houston Beltway 610, take 45 South to the NASA Rd. No. 1 exit. Go East, check in at the Ramada Inn and give us a call at 483-4831 or at 332-3551 for detailed information and a hearty welcome.

Conference registration is scheduled at Gilruth Center 8:30 a.m., however if you need transportation assemble at the Ramada lobby at 8:00 a.m. preparatory to boarding the bus. Also, please do call us at the above listed number and notify us of your arrival.

For additional information or to get questions answered call any of the following numbers.

  
Alfonso B. Romero, Director

Sincerely,

  
A. Carlos Correa, Assistant

# NASA'S TECHNOLOGY UTILIZATION PROGRAM

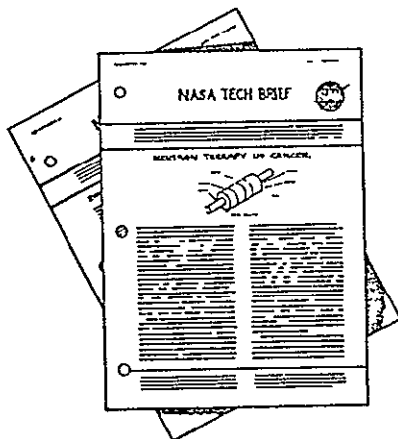


## *Publications and Services Available to Industry*

### NASA Tech Briefs

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 5,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from:

National Technical Information Service  
Springfield, Virginia 22151  
Attn: Code 152 61

### Technology Utilization Program Special Publications

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following:

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances, Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each

compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits."

Additional information concerning any of the publications described above may be obtained from

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D C. 20546

### Regional Dissemination Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of a Regional Dissemination Center.

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters.

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government-agencies as well.

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Single copies of the journal are 55 cents. Annual subscriptions are \$2.25 (plus 60 cents for foreign mailing). A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceding issue; each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22151, at a cost of \$3 for Section 1 and \$6 for Section 2. Ask for the most recent issues of NASA SP-7039.

FOR ADDITIONAL INFORMATION CALL THE NASA OR OMBE REPRESENTATIVE CLOSEST TO YOU

Washington, D.C.

Mr. Alfonso Romero  
InterAmerica Research Associates (Conference Host)  
202-333-4900

Mr. James Dixon  
NASA EEO Office  
202-755-2244

Mr. Ray Gilbert  
NASA Technology Utilization Office  
202-755-3111

Mr. Ted Lettes  
OMBE Headquarters  
202-967-3165

Dallas

Mr. Richard Sewing  
OMBE Regional Office  
214-749-7581

Houston

Mr. Jose Perez  
NASA Minority Business Enterprise  
Procurement Specialist  
713-483-4831

San Antonio

Santiago Mendoza  
InterAmerica  
512-225-4071

-Return to-  
InterAmerica Research Associates  
Attention: A. B. Romero  
2001 Wisconsin Ave., N.W.  
Suite 275  
Washington, D.C. 20007

CONFIRMATION

I will attend the NASA T.U. Conference.  
I would like additional information.  
I will not attend.

INDUSTRY OR AREA OF INTEREST

Light manufacturing, type: \_\_\_\_\_  
Heavy manufacturing, type: \_\_\_\_\_  
Electrical assembly, type: \_\_\_\_\_  
Service industry, type: \_\_\_\_\_  
Other: \_\_\_\_\_  
Your Name & Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



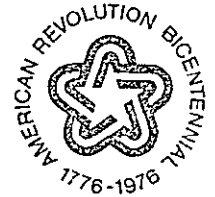
LOS ANGELES TECHNOLOGY UTILIZATION CONFERENCE

May 3, 1975

FORMAL INVITATIONS



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



March 31, 1975

REPLY TO  
ATTN OF

Your firm has been identified as a minority owned business enterprise which might potentially benefit from the NASA Technology Utilization Program. You are cordially invited to represent your firm at, or send a representative to, the Technology Utilization Conference to be held May 3, 1975, Saturday - at the Industrial Applications Center, Olin Hall of Engineering, University of Southern California.

The conference is being jointly sponsored by the National Aeronautics and Space Administration (NASA) and the Office of Minority Business Enterprises (OMBE). The purpose of this conference is to provide minority businessmen access to valuable technological and managerial information which research and development programs have amassed.

At this conference you will have the opportunity to discuss your business interests with a NASA resource technician who will then assist you in initiating a computer search for information relating to your business interests. When the search is completed you will be mailed a computer read-out listing information resources that deal with your specific technical and/or managerial interest. Computer time necessary to conduct this search is both expensive and valuable, but not as valuable as the information it leads you to. For purposes of this conference, no charges will be made for this service.

Please read the enclosed literature and if you decide to attend the seminar, please fill out the registration form and return it to the indicated address. Be sure to indicate your business area so that NASA technicians can prepare information addressing your specific needs.

Come to the conference and find out how NASA technology and information can help your company turn your technical problems into profits, your ideas into products, and your products into sellers.

Jeffrey Hamilton  
Director, Technology Utilization  
Office

Sincerely,

Harriet G. Jenkins  
Assistant Administrator for Equal  
Opportunity Programs

P.S. For more information, contact Mr. Radford King, Industrial Applications Center, USC, 213-746-6132.



March 31, 1975

MAIN OFFICE: WASHINGTON, D C  
FIELD OFFICES: SAN ANTONIO, TEXAS  
FRESNO, CALIFORNIA  
LAWRENCE, KANSAS

Dear Conferee:

InterAmerica Research Associates welcomes you to the Technology Utilization Conference and looks forward to serving as your host. In order to facilitate your travel arrangements and answer any questions you might have, we have included this logistical letter.

CONFERENCE SITE AND TIME

SITE: Industrial Applications Center of the University of Southern California  
TIME: Saturday, May 3, 1975  
LOCATION: Instructional Television Center Auditorium, Olin Hall of Engineering

TRANSPORTATION AND DIRECTIONS

FROM DOWNTOWN LA: South on Harbor Freeway, exit Exposition Boulevard Off Ramp, right turn into Hoover Street Entrance of USC.  
FROM LA AIRPORT: South on San Diego Freeway, north on Harbor Freeway, exit Exposition Boulevard Off Ramp, right turn into Hoover Street Entrance of USC.  
PARKING FACILITIES: After entering the campus, make the first left turn onto 37th Place where you will find parking facilities conveniently located across the street from the conference center.  
AIRLINE FLIGHTS: Six airlines fly from San Francisco to LA, totalling five flights an hour. An airport limousine will take you to the downtown Hilton Hotel for \$1.55. A taxi from here to the site is only a fifteen minute ride.

ACCOMMODATIONS

MOTEL: Vagabond Motel on 3101 S. Figueroa Street  
COST: \$15 per night for conference participants  
LOCATION: One block from the campus  
RESERVATIONS: For reservations call 213-746-1531

FOR INFORMATION WHEN YOU ARRIVE IN LA

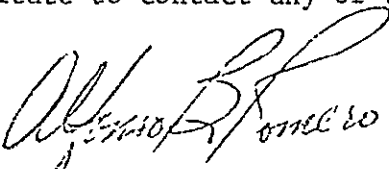
DURING OFFICE HOURS: Call 213-746-6132 for specific information.  
BEFORE OR AFTER HOURS: Call 213-746-1531.  
CONTACT: Ask for Mr. Al Romero or Ms. Mary Wrasman.


REGISTRATION

TIME: 8:30 AM  
PLACE: Reception Area of the Olin Hall of Engineering  
LUNCH: There will be a minimal charge of \$4.00 to cover the price of your lunch.

If you need additional information, or if you have any further questions, please do not hesitate to contact any of the persons listed on the reverse side of this sheet.

Sincerely,

  
Alfonso B. Romero, Director

  
Mary Wrasman, Assistant

2001 Wisconsin Avenue, N.W. • Suite 275 • Washington, D. C. 20007

Phone 202—333-4900

FOR ADDITIONAL INFORMATION

In Los Angeles

Mr. Radford King, Director Industrial Applications Center	213-746-6132
--	--------------

In San Francisco

Mr. Berry Becker Office of Minority Business Enterprise	415-556-6733
--	--------------

In Washington, D.C.

Mr. Al Romero, Director Ms. Mary Wrasman, Assistant InterAmerica Research Associates (Conference Host)	202-333-4900
---	--------------

## WHAT'S SO IMPORTANT ABOUT TECHNOLOGY?

EVERYTHING. We live in an environment of technology and change. The market you are selling today may not exist tomorrow because of the development of a new product, process or technique that has made yours obsolete.

NEED INFORMATION? We have information about developments  
in:

- |                         |                     |
|-------------------------|---------------------|
| * CHEMICALS             | * METAL FABRICATION |
| * DATA SYSTEMS          | * OPTICS            |
| * ELECTRONICS           | * PLASTIC           |
| * ENGINEERING DESIGN    | * PLATING           |
| * GENERAL MANUFACTURING | * RESEARCH          |

These are just a few of the areas for which technological information is stored. You are invited to send a representative to a technology utilization conference to be held at:

UNIVERSITY OF SOUTHERN CALIFORNIA  
INDUSTRIAL APPLICATIONS CENTER  
DATE: SATURDAY, MAY 3, 1975

FOR MORE INFORMATION  
CONTACT MR. RADFORD KING  
INDUSTRIAL APPLICATIONS CENTER  
213-746-6132

Come to the conference and you will be provided the opportunity to explore the vast federal store of technical and managerial information. In addition, you will meet with representatives from private sector firms to discuss procurement opportunities.

Co-Sponsored by: National Aeronautics and Space Administration  
and the Department of Commerce, Office of  
Minority Business Enterprises

# NASA'S TECHNOLOGY UTILIZATION PROGRAM



## *Publications and Services Available to Industry*

### **NASA Tech Briefs**

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 5,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from

National Technical Information Service  
Springfield, Virginia 22151  
Attn. Code 152 61

### **Technology Utilization Program Special Publications**

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following:

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances; Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each

compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits."

Additional information concerning any of the publications described above may be obtained from:

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D C. 20546

### Regional Dissemination Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of a Regional Dissemination Center.

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development.

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters.

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States.

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government agencies as well.

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Single copies of the journal are 55 cents. Annual subscriptions are \$2.25 (plus 60 cents for foreign mailing). A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceding issue; each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22151, at a cost of \$3 for Section 1 and \$6 for Section 2. Ask for the most recent issues of NASA SP-7039.

-Return To-  
InterAmerica Research Associates  
Attn: A. B. Romero  
2001 Wisconsin Avenue, N.W.  
Suite 275  
Washington, D.C. 20007

CONFIRMATION

I will attend the NASA T.U. Conference.  
I would like additional information.  
I will not attend.

INDUSTRY OR AREA OF INTEREST

Light manufacturing, type: \_\_\_\_\_  
Heavy manufacturing, type: \_\_\_\_\_  
Electrical assembly, type: \_\_\_\_\_  
Service industry, type: \_\_\_\_\_  
Other: \_\_\_\_\_  
Your Name & Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# TECHNOLOGY MEANS PROFITS

Co-Sponsored by : National Aeronautics and Space Administration  
and the Department of Commerce, Office of  
Minority Business Enterprise

AGENDA

TECHNOLOGY UTILIZATION CONFERENCE

University of Southern California  
ITV Center Auditorium, Olin Hall of Engineering  
Saturday, May 3, 1975

<u>TIME</u>	<u>ACTIVITY</u>	<u>LOCATION</u>
8:30 - 9:00	Registration  Conference Moderator - Mr. Harrison Allen Jr., Technology Utilization Officer, Lewis Research Center, Cleveland, Ohio	Reception Area
9:00 - 9:05	Welcoming by Host Facility Representative Speaker: Title:	Auditorium
9:05 - 9:10	Welcoming by OMBE Representative Speaker: Title:	
9:10 - 9:25	Program Introduction Presentation setting the tone and mood of conference, display of examples of successful commercial applications of NASA Technology Speaker: Mr. Harrison Allen	
9:25 - 9:40	Conference Purpose and Objective Outline of the program, statement of specific purpose and intent of the program, and introduction of the resource people present. Speaker: Mr. Ray Gilbert Chief Special Projects NASA Technology Utilization Office Washington, D.C.	
9:40 - 9:55	The Regional Dissemination Center System Presentation of what an Industrial Application Center is, what services are available, scope of information available, information retrieval process and cost to users. Speaker: Mr. Radford King Director, Industrial Applications Center Los Angeles, California	

<u>TIME</u>	<u>ACTIVITY</u>	<u>LOCATION</u>
8:00 - 11:30	Technology Utilization Workshops 1. Chemical/Plastics 2. Electronics/Communications 3. Mechanical Design 4. Pollution  Each workshop leader will present in detail the IAC services and the mechanics of the retrieval process. An actual search will be run on the video system for all to monitor. Technical literature will be given out and each participant will be assisted with questions relating to individual search requests. Workshop format: Open Dialogue Staff; I.A.C.Managers/T. U. Officers	Studios A,B,C,D (Details at Conference)
11:30 - 12:00	Workshop Crossover Workshop Participants may change workshops or continue with their original selection.	Studios A,B,C,D (Details at Conference)
12:30 - 2:00	Luncheon Speaker: Mr. Hosea M. Alexander Task Manager, Technical Applications to Health Resources Planning, Jet Propulsion Laboratories, Pasadena, California Subject: NASA Technology and the Martin Luther King, Jr. Hospital	Town 'n Gown
2:00 - 3:30	Commercializing Technology Workshops Concurrent workshops combining public and private sector technical resource people with procurement and marketing personnel. Highlights, how to do business with major institutions, markets for technically derived products and market development techniques. Format: Open dialogue Workshop Resource People: NASA - Deven E. Biggs; JPL - Walter H. Anderson; Rockwell - Sy Gottlieb, Bud Goldstone; Sears - Neil Piket, Robert Shibley; IBM - Garret Corp. -	Studios A,B,C,D (Details at Conference)
3:30 - 4:30	Technical Panel - Question and Answer Period Panel composed of resource people who participated in the program. The panel is open to questions from the floor. Moderator: Mr. Ray Gilbert	Auditorium
4:30 - 5:00	Conference Evaluation and Conclusion After evaluation, open interaction between audience and resource people. Coordinator - Mr. Ray Gilbert	Auditorium

BOSTON TECHNOLOGY UTILIZATION CONFERENCE

July 1, 1975

FORMAL INVITATIONS



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

NASA CAN BE PART OF  
YOUR RESEARCH AND DEVELOPMENT STAFF -  
FREE!

You have a one time only opportunity to explore the NASA information banks free. You can search for technical information, product ideas and diversification opportunities to name but a few of the resources available.

NASA wants to stimulate the development of technology within the minority business community. You have been selected as a technically based minority enterprise, the type who can turn NASA information into products, and products into profits.

NASA in co-sponsorship with the Office of Minority Business Enterprise has scheduled a workshop to be held in the city of Boston on July 1, 1975, to introduce you to the information retrieval search which will be performed for you - free. Registration information will be mailed to you shortly. But mark your calendar now, this is an important opportunity for your company.

Sincerely,

A handwritten signature in cursive script, reading "Harriett G. Jenkins".

Harriett G. Jenkins  
Assistant Administrator for Equal  
Opportunity Programs

A handwritten signature in cursive script, reading "Jeffrey T. Hamilton".

Jeffrey T. Hamilton  
Director, Technology  
Utilization Office

# NASA'S TECHNOLOGY UTILIZATION PROGRAM

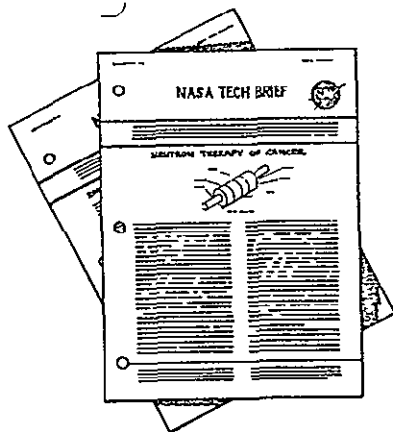


## *Publications and Services Available to Industry*

### **NASA Tech Briefs**

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 6,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from.

National Technical Information Service  
Springfield, Virginia 22161  
Attn Code 152 61

### **Technology Utilization Program Special Publications**

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following.

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances, Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each

compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits."

Additional information concerning any of the publications described above may be obtained from:

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D C 20546

### Industrial Applications Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of an Industrial Applications Center.

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development.

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States.

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government agencies as well.

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Single copies of the journal are 65 cents. Annual subscriptions are \$2.60. A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceding issue, each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22161. Ask for the most recent issues of NASA SP-7039. The price of the bibliography varies depending on the size of the individual issue.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D.C. 20546



REPLY TO  
ATTN OF

You have been invited to attend NASA's Technology Utilization Conference to be held on July 1, 1975 at the Sheraton Boston Hotel. Enclosed you will find a detailed information packet including agenda, logistical information, and registration information.

Your attendance at this conference offers you the chance to discuss your technical interests, product ideas, and diversification possibilities with a NASA technician who will assist you in initiating a computer search specifically tailored to your company. At any other time, this search would cost you from \$150 to \$1000, but participants at this conference will receive a search at no cost.

Please indicate whether you will or will not attend by checking your preference at the bottom of this page. Then return this sheet in the enclosed self-addressed envelope so we can reserve your place.

Sincerely,

A handwritten signature in cursive script, reading "Alfonso B. Romero".  
Alfonso B. Romero  
Conference Manager

\_\_\_\_\_ Please reserve me a place at the conference.

\_\_\_\_\_ I will not be able to attend.



## PROPOSED AGENDA

BOSTON TECHNOLOGY UTILIZATION CONFERENCE  
SHERATON BOSTON HOTEL  
JULY 1, 1975

THEME: "Minority Business Development through Technology Transfer"

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
9:30 - 10:00	Registration	Hampton Room Corridor
10:00 - 10:05	Orientation and Introduction to Conferees Speaker: Mr. Ray Gilbert Chief Special Projects Technology Utilization Office Washington, D.C.	Hampton Room
10:05 - 10:25	NASA Technology/Commercialization Presentation concerning the successful commercial application of NASA technology, giving examples. Speaker: Mr. Chuck Kubakawa Chief Technology Utilization Officer Ames Research Center Moffett Field, California	Hampton Room
10:30 - 1:30	Technology Utilization Workshops	

Topics:

- A. Electronics
- B. Mechanical
- C. Materials
- D. Pollution
- E. Energy

10:30	11:30	12:30	LOCATION
Electronics	Electronics	Electronics	Exeter Room
Mechanical	Mechanical	Mechanical	Dalton Room A
Materials	Pollution	Energy	Dalton Room B

Each workshop leader will present in detail the Industrial Application Center Services and the mechanics of the retrieval process. Technical literature will be given out and each participant will be assisted in structuring his individual search request.

Resource personnel will be available throughout the afternoon for individual consultation.

## LOGISTICAL INFORMATION

FOR MORE INFORMATION, CALL: Mr. Herb Fajors 617-266-0144  
Mr. Al Romero or Ms. Mary Wrasman 202-333-4900

### WHERE AND WHEN

SITE: The Sheraton Boston Hotel  
Prudential Center

DATE: Tuesday, July 1, 1975

TIME: 9:30 AM - 1:30 PM

Registration will begin at 9:30 AM  
in the Hampton Room on the third floor.

### DIRECTIONS

FROM MASSACHUSETTS TURNPIKE:

Take Exit 22 - Prudential Center, passes  
directly in front of the Sheraton Boston.

FROM LOGAN AIRPORT: Limousine from  
airport to hotel -  
\$2.50

If driving, follow signs to Boston, go  
through Callahan tunnel onto Starow Drive,  
exit on the Back Bay Exit, Right on  
Beacon Street, Left on Exeter, Right on  
Huntington. You will see hotel located  
near Prudential Center.

### TRANSPORTATION

FROM HARTFORD, 1/2 hour flight  
CONNECTICUT: \$23.37 One Way

Weekday schedule has 6 flights a day to  
Boston and 5 flights returning. Airlines  
are Delta, Eastern, Allegheny, and TWA.

FROM LAGUARDIA 1 hour flight  
AIRPORT, NY: \$31.37 One Way

Weekday schedule has flights every hour on  
the hour on the Eastern Shuttle from 7:00AM  
to 10:00PM in both directions.

### FOOD AND LODGING

IN THE IMMEDIATE AREA:

SHERATON BOSTON HOTEL: \$30.00 single  
617-236-2000

MIDTOWN MOTOR INN: \$22.50-\$26.50 single  
617-262-1000

COPLEY SQUARE HOTEL: \$20.00 single w/bath  
617-536-9000 \$10.00 single w/o bath

LUNCH: There will be no formal luncheon.  
However, the Sheraton's Kon-Tiki  
Room serves a buffet at lunch for  
\$3.50 if you so desire.

\*\*\*\*\*

## WHAT'S SO IMPORTANT ABOUT TECHNOLOGY?

EVERYTHING. We live in an environment of technology and change. The market you are selling today may not exist tomorrow because of the development of a new product, process or technique that has made yours obsolete.

NEED INFORMATION? We have information about developments in:

- |                         |                     |
|-------------------------|---------------------|
| * CHEMICALS             | * METAL FABRICATION |
| * DATA SYSTEMS          | * OPTICS            |
| * ELECTRONICS           | * PLASTIC           |
| * ENGINEERING DESIGN    | * PLATING           |
| * GENERAL MANUFACTURING | * RESEARCH          |

These are just a few of the areas for which technological information is stored. You are invited to send a representative to a technology utilization conference to be held at:

THE BOSTON SHERATON HOTEL  
PRUDENTIAL CENTER  
TUESDAY, JULY 1, 1975

FOR MORE INFORMATION  
CONTACT MR. HERB FAJORS  
BLACK CORPORATION PRESIDENTS OF NEW ENGLAND  
617-266-0144

Come to the conference and you will be provided the opportunity to explore the vast federal store of technical and managerial information.

Co-Sponsored by: National Aeronautics and Space Administration  
and the Department of Commerce, Office of  
Minority Business Enterprise

\*\*\*\*\*



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

June 20, 1975

In accordance with your invitation response, a reservation has been confirmed for your firm at the NASA Technology Utilization Conference to be held Tuesday, July 1, 1975 at the Sheraton Boston Hotel.

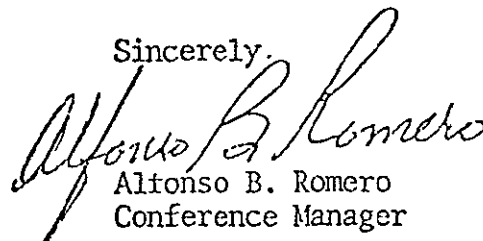
The seminar has been structured to reflect the specific interests of confirmed attendees. During the workshops, you will have the opportunity to interact with NASA technicians and to discuss your individual business interests.

Registration begins at 9:30 A.M. and the formal proceedings of the conference will continue until 1:30 P.M. Resource personnel will be available throughout the afternoon for individual consultation.

If circumstances prevent your firm from sending a representative to the workshop, please contact our office to cancel the reservation as soon as possible.

We look forward to meeting you at the seminar.

Sincerely,

  
Alfonso B. Romero  
Conference Manager

SAN FRANCISCO TECHNOLOGY UTILIZATION CONFERENCE

September 11, 1975

FORMAL INVITATIONS



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

NASA CAN BE PART OF  
YOUR RESEARCH AND DEVELOPMENT STAFF -  
FREE!

You have a one time only opportunity to explore the NASA information banks free. You can search for technical information, product ideas and diversification opportunities to name but a few of the resources available.

NASA wants to stimulate the development of technology within the minority business community. You have been selected as a technically based minority enterprise, the type who can turn NASA information into products, and products into profits.

NASA in co-sponsorship with the Office of Minority Business Enterprise has scheduled a workshop to be held in the San Francisco/Oakland Bay area on September 11, 1975, to introduce you to the information retrieval search which will be performed for you - free. Registration information will be mailed to you shortly. But mark your calendar now, this is an important opportunity for your company.

Sincerely,

Harriett G. Jenkins  
Assistant Administrator for  
Equal Opportunity Programs

Louis N. Mogavero  
Acting Director, Technology  
Utilization Program

# NASA'S TECHNOLOGY UTILIZATION PROGRAM



## *Publications and Services Available to Industry*

### **NASA Tech Briefs**

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 6,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from:

National Technical Information Service  
Springfield, Virginia 22161  
Attn: Code 152.61

### **Technology Utilization Program Special Publications**

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following:

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances, Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each

compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits"

Additional information concerning any of the publications described above may be obtained from.

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D.C. 20546

### Industrial Applications Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of an Industrial Applications Center

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development.

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters.

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States.

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government agencies as well.

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Single copies of the journal are 65 cents. Annual subscriptions are \$2.60. A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceding issue; each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22161. Ask for the most recent issues of NASA SP-7039. The price of the bibliography varies depending on the size of the individual issue.





NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

You have been invited to attend NASA's Technology Utilization Conference to be held on September 11, 1975 at the TowneHouse Hotel in San Francisco. Enclosed you will find a detailed information packet including agenda, logistical information, and registration information.

Your attendance at this conference offers you the chance to discuss your technical interests, product ideas, and diversification possibilities with a NASA technician who will assist you in initiating a computer search specifically tailored to your company. At any other time, this search would cost you from \$150 to \$1000, but participants at this conference will receive a search at no cost.

Please indicate whether you will or will not attend by checking your preference at the bottom of this page. Then return this sheet in the enclosed self-addressed envelope so we can reserve your place.

Sincerely,

A handwritten signature in cursive script, reading "Alfonso B. Romero".  
Alfonso B. Romero  
Conference Manager

\_\_\_\_\_ Please reserve me a place at the conference.

\_\_\_\_\_ I will not be able to attend.



# LOGISTICAL INFORMATION

FOR MORE INFORMATION, CALL: Mr. Barry Becker 415-556-6733  
Ms. Mary Wrasman 202-333-4900

\*\*\*\*\*  
\*  
\* WHERE AND WHEN \*  
\* \*  
\* \*  
\* \*  
\* SITE: The TowneHouse Hotel \*  
\* Market at Eighth Street \*  
\* \*  
\* DATE: Thursday, September 11, 1975 \*  
\* \*  
\* TIME: 10:30 AM \*  
\* \*  
\* Registration will begin at 10:30 AM \*  
\* in the Golden Gate Room on the \*  
\* second floor. \*  
\* \*  
\* \*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* DIRECTIONS \*  
\* \*  
\* \*  
\* FROM OAKLAND: Bay Bridge, Route 80, Exit \*  
\* 9th Street N. to Market, Right on Market, \*  
\* one block to hotel. \*  
\* \*  
\* FROM SAN JOSE: Bayshore Freeway, Rte. 101 \*  
\* N. to Civic Center Off Ramp, Exit Right to \*  
\* 9th Street N. to Market. Right on Market, \*  
\* one block to hotel. \*  
\* \*  
\* FROM SAN FRANCISCO AIRPORT: Rte. 101 N., \*  
\* Civic Center Turn Off to 9th Street N. to \*  
\* Market, Right on Market, one block to \*  
\* hotel. \*  
\* \*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* FOOD AND LODGING \*  
\* \*  
\* IN THE IMMEDIATE AREA: \*  
\* THE TOWNEHOUSE HOTEL: \$24.00 single \*  
\* 415-863-7100 \*  
\* \*  
\* PSA SAN FRANCISCO: \$20.00 - \$30.00 single \*  
\* 415-626-8000 \*  
\* \*  
\* HOLIDAY INN : \$26.00 single \*  
\* 415-626-6103 \*  
\* \*  
\* LUNCHEON: There will be a registration fee \*  
\* of approximately \$5.00 for the formal lunch.\*  
\* \*  
\* \*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* TRANSPORTATION \*  
\* \*  
\* \*  
\* BART: The Civic Center Station of BART \*  
\* is located directly across the street from \*  
\* The TowneHouse Hotel. \*  
\* \*  
\* AIRLINES: Six airlines fly from LA to \*  
\* San Francisco, totalling five flights an \*  
\* hour. The cost is \$22 one-way. \*  
\* \*  
\* FROM SAN FRANCISCO AIRPORT: Take the \*  
\* Airport Bus to the downtown station, a \*  
\* taxi from here to the hotel will cost \*  
\* approximately \$3.00. \*  
\* \*  
\* \*  
\*\*\*\*\*

PROPOSED AGENDA

SAN FRANCISCO TECHNOLOGY UTILIZATION CONFERENCE .  
THE TOWNEHOUSE HOTEL  
SEPTEMBER 11, 1975

THEME: "Minority Business Development through Technology Transfer"

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:30 - 11:00	REGISTRATION	Golden Gate Room
11:00 - 11:15	ORIENTATION AND INTRODUCTION TO CONFEREES General discussion of why and how minority businesses should develop capabilities in technological areas. Speaker: Mr. Ray Gilbert Chief Special Projects NASA Technology Utilization Office Washington, D.C.	Golden Gate Room
11:15 - 11:25	COMMERCIAL APPLICATION OF SPACE TECHNOLOGY- Ames Research Center Display and discussion of items developed by NASA which have commercial applications. Speaker: Mr. Chuck Kubokawa Chief Technology Utilization Officer Ames Research Center Moffett Field, CA	Golden Gate Room
11:25 - 11:30	COMMERCIAL APPLICATION OF SPACE TECHNOLOGY - Lewis Research Center Further display and discussion of NASA developed items with commercial applicability. Speaker: Mr. Harrison Allen, Jr. Technology Utilization Officer Lewis Research Center Cleveland, Ohio	Golden Gate Room
11:30 - 11:45	NASA PATENTS AND LICENSING Discussion of the nature of the program and the opportunities it represents for the minority businessman. The discussion is open for questions from the floor. Speaker: Mr. Darrell G. Brekke Patent Counsel Ames Research Center Moffett Field, CA	Golden Gate Room

(Continued on reverse side)

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
11:45 - 1:00	LUNCHEON Speaker: To be announced	To Be Announced
1:00 - 1:45	THE INDUSTRIAL APPLICATIONS CENTER SYSTEM Discussion of the IAC System presenting a general approach to using information services. The presentation will center on a discussion and detailed explanation of the automated and manual search processes and the type of documents which result from a search. Speaker: Mr. Radford King Director, Western Research Application Center (WESRAC) University of Southern California Los Angeles, California	Golden Gate Room
1:45 - 3:00	THREE CONCURRENT TECHNOLOGY UTILIZATION WORKSHOPS Three workshops will be held concurrently illustrating the workings of the Industrial Applications Center System. Workshop leaders will engage in an active interchange with participants concerning their areas of interest. Based upon participant's questions, an on-line terminal will be used to illustrate the method and results which can be expected from a search request. Workshop Leaders: Staff Western Research Application Center (WESRAC) University of Southern California Los Angeles, California	To Be Announced
3:00 - 3:30	GENERAL OVERVIEW AND SUMMARY A general wrap-up of the day's activities in which search requests will be distributed so that participants can avail themselves of NASA's offer of one free search. Evaluation questionnaires will also be distributed. Moderator: Mr. Ray Gilbert Chief Special Projects NASA Technology Utilization Office Washington, D.C.	Golden Gate Room

CHICAGO TECHNOLOGY UTILIZATION CONFERENCE

October 21, 1975

FORMAL INVITATIONS



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

NASA CAN BE PART OF  
YOUR RESEARCH AND DEVELOPMENT STAFF -

FREE!

September 22, 1975

You have a one time only opportunity to explore the NASA information banks free. You can search for technical information, product ideas and diversification opportunities to name but a few of the resources available.

NASA wants to stimulate the development of technology within the minority business community. You have been selected as a technically based minority enterprise, the type who has the potential to turn NASA information into products, and products into profits.

NASA in co-sponsorship with the Office of Minority Business Enterprise has scheduled a workshop to be held in Chicago on October 21, 1975, to introduce you to the information retrieval search which will be performed for you - free. Registration information will be mailed to you shortly. But mark your calendar now, this is an important opportunity for your company.

Sincerely,

A handwritten signature in dark ink, appearing to read "Peter H. Chen".

Peter H. Chen  
Deputy Assistant Administrator for  
Equal Opportunity Programs

A handwritten signature in dark ink, appearing to read "Louis N. Mogavero".

Louis N. Mogavero  
Acting Director, Technology  
Utilization Program

# NASA'S TECHNOLOGY UTILIZATION PROGRAM



## *Publications and Services Available to Industry*

### **NASA Tech Briefs**

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 6,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from.

National Technical Information Service  
Springfield, Virginia 22161  
Attn. Code 152.61

### **Technology Utilization Program Special Publications**

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following:

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances, Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each



compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits."

Additional information concerning any of the publications described above may be obtained from:

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D.C. 20546

### Industrial Applications Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of an Industrial Applications Center.

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development.

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters.

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States.

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government agencies as well

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Single copies of the journal are 65 cents. Annual subscriptions are \$2.60. A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceeding issue; each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22161. Ask for the most recent issues of NASA SP-7039. The price of the bibliography varies depending on the size of the individual issue.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

You have been invited to attend NASA's Technology Utilization Conference to be held on October 21, 1975 at the Illinois Institute of Technology in Chicago. Enclosed you will find a detailed information packet including agenda, logistical information, and registration information.

Your attendance at this conference offers you the chance to discuss your technical interests, product ideas, and diversification possibilities with a NASA Technician who will assist you in initiating a computer search specifically tailored to your company. At any other time, this search would cost you from \$150 to \$1000, but participants at this conference will receive a search at no cost.

Please indicate whether you will or will not attend by checking your preference at the bottom of this page. Then return this sheet in the enclosed self-addressed envelope so we can reserve your place.

Sincerely,

A handwritten signature in cursive script, reading "David M. Talbot", is written over a large, oval-shaped ink smudge or stamp.

David M. Talbot  
Conference Manager

☐ Please reserve me a place at the conference

☐ I will not be able to attend.

\*\*\*\*\*

WHAT'S SO IMPORTANT ABOUT TECHNOLOGY ?

EVERYTHING. We live in an environment of technology and change. The market you are selling today may not exist tomorrow because of the development of a new product, process or technique that has made yours obsolete.

NEED INFORMATION? We have information about developments in:

- |                         |                      |
|-------------------------|----------------------|
| * CHEMICALS             | * METAL FABRICATION  |
| * PLASTICS              | * ELECTRONICS        |
| * GENERAL MANUFACTURING | * DATA SYSTEMS       |
| * MECHANICAL SYSTEMS    | * ENGINEERING DESIGN |
| * MACHINING             | * MANAGEMENT SYSTEMS |

These are just a few of the areas for which technological information is stored. You are invited to send a representative to a technology utilization conference to be held at:

THE ILLINOIS INSTITUTE OF TECHNOLOGY

35TH & STATE STREETS  
TUESDAY, OCTOBER 21, 1975

FOR MORE INFORMATION

CONTACT MR. DAVE VEGA  
CHICAGO OFFICE OF MINORITY BUSINESS ENTERPRISE  
312-353-8375

Come to the conference and you will be provided the opportunity to explore the vast federal store of technical and managerial information.

Co-Sponsored by: National Aeronautics and Space Administration  
and the Department of Commerce, Office of  
Minority Business Enterprise.

\*\*\*\*\*

# LOGISTICAL INFORMATION

FOR MORE INFORMATION, CALL: Mr. Dave Vega 312-353-8375  
Ms. Mary Wrasman 202-333-4900

\*\*\*\*\*  
\*  
\* WHERE AND WHEN \*  
\*  
\*  
\*  
\* SITE: Illinois Institute of Technology \*  
\* 35th and State Streets, Chicago \*  
\*  
\* DATE: October 21, 1975, Tuesday \*  
\*  
\* TIME: 10:00 AM \*  
\*  
\* Registration will begin at 10:00 AM \*  
\* in the lobby of the Main Auditorium \*  
\* on the ground floor. \*  
\*  
\*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* FOOD AND LODGING \*  
\*  
\*  
\* LUNCHEON: There will be a registration \*  
\* fee of approximately \$5.00 for the lunch. \*  
\*  
\* HOTELS: If you are coming in from out \*  
\* of town, there are two hotels in the \*  
\* immediate vicinity: \*  
\*  
\* THE PICK-CONGRESS HOTEL: \$24.00 single \*  
\* 312-427-4300 \*  
\*  
\* THE BLACKSTONE HOTEL: \$26.00 single \*  
\* 312-427-4300 \*  
\*  
\*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* DIRECTIONS \*  
\*  
\*  
\*  
\* FROM O'HARE AIRPORT: Take the Eisenhower \*  
\* Expressway to the Dan Ryan Expressway to \*  
\* 35th Street South. Follow the signs to \*  
\* the Illinois Institute. \*  
\*  
\*  
\* FROM THE LOOP: Take Michigan Avenue \*  
\* south, then turn west on 35th Street. \*  
\* After travelling several blocks, you \*  
\* will see the Illinois Institute. \*  
\*  
\*  
\*  
\*\*\*\*\*

\*\*\*\*\*  
\*  
\* TRANSPORTATION \*  
\*  
\*  
\* BY SUBWAY: From Downtown, take any \*  
\* southbound train to 35th Street. The \*  
\* exit is marked Illinois Institute of \*  
\* Technology. \*  
\*  
\* FROM AIRPORT: Take an airport limousine \*  
\* to any of the downtown hotels.(\$2.50) \*  
\* From here, either follow above subway \*  
\* instructions or take a taxi which is \*  
\* a ten minute ride. \*  
\*  
\*  
\*  
\*\*\*\*\*

AGENDA DRAFT  
ILLINOIS INSTITUTE OF TECHNOLOGY  
CHICAGO TECHNOLOGY UTILIZATION CONFERENCE

OCTOBER 21, 1975

THEME: 'Minority Business Development through Technology Transfer'

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:00 - 10:30	<u>REGISTRATION</u>	Main Lobby
10:30 - 10:35	<u>WELCOMING ADDRESS</u> Speaker: Mr. Jack Smith, Director OMBE Regional Office 55 E. Monroe, Suite 1438 Chicago, Illinois	Auditorium (Main Floor)
10:35 - 11:00	<u>PROGRAM INTRODUCTION</u> Conferee Orientation. Seminar Objectives Speaker: Mr. Ray L. Gilbert Manager, State and Local Technology NASA Technology Utilization Office Washington, D.C. 20546	Auditorium
11:00 - 11:30	<u>COMMERCIAL APPLICATION OF SPACE TECHNOLOGY</u> Display and Discussion of items developed by NASA which have commercial applications. Speakers: Mr. Harrison Allen, Jr. Technology Utilization Engineer Lewis Research Center Cleveland, Ohio 44135  Mr. Chuck Kubokawa Chief, Technology Utilization Office Ames Research Center Moffett Field, CA 94035	Auditorium
11:30 - 11:45	<u>NASA PATENTS AND LICENSING</u> Procedures for acquiring NASA patents and licenses. Question and Answer Period. Speaker: Mr. Gene E. Shook, Sr. Patent Advisor, Office of Patent Counsel Lewis Research Center Cleveland, Ohio 44135	Auditorium
11:45 - 1:15	<u>LUNCHEON PROGRAM</u> Topic: To Be Announced Speaker: To Be Announced	West Dining Room

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
1:15 - 1:45	<u>THE INDUSTRIAL APPLICATIONS CENTER SYSTEM</u> Discussion and detailed explanation of the information and services available through the Aerospace Research Applications Center (ARAC). Examples of specific cases and practical applications of the center's services. Speakers: Dr. Robert D. Shriner, Director Aerospace Research Applications Center (ARAC) Indiana University 400 E. 7th Street Bloomington, Indiana 47401  Mr. Thor Semlar Director of Technical Services, ARAC	Auditorium
1:45 - 3:15	<u>TECHNOLOGY UTILIZATION WORKSHOPS</u> Personal consultation with ARAC technical personnel regarding specific business interests and problems. Workshops will be divided into topic areas; ARAC personnel experienced in a variety of areas will be available for questions and consultation.  <u>WORKSHOP I - CHEMICAL/PLASTICS</u> Consultants: Dr. Shirley Cordes Senior Scientist, ARAC  Dr. Joseph D. DiSalvo ARAC Director of Industrial Services  <u>WORKSHOP II - METAL WORKING/MACHINING/MECHANICAL SYSTEMS</u> Consultants: Mr. Frank Watt Mechanical Engineer, ARAC  Dr. Robert Shriner Director, ARAC  <u>WORKSHOP III - ELECTRONICS AND ELECTRICAL SYSTEMS</u> Mr. Fred Gaspar Electrical Engineer, ARAC  Mr. Thor Semlar Director of Technical Services, ARAC	Conference Rooms
3:15 - 3:30	<u>GENERAL OVERVIEW AND SUMMARY</u> Program Wrap Up. Distribution of Evaluation Questionnaires. Moderator: Mr. Ray L. Gilbert	Auditorium



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

October 14, 1975

In accordance with your response to our invitation, a reservation has been confirmed for your firm at the NASA Technology Utilization Conference to be held Tuesday, October 21, 1975 at the Illinois Institute of Technology in Chicago.

The seminar has been structured to reflect the specific interests of the firms in attendance. During the workshops, you will have the opportunity to discuss your individual business interests with NASA technicians.

Registration will begin at 10:00 A.M. and the formal proceedings of the conference will continue until 3:30 P.M.

If circumstances prevent your firm from attending the seminar, please contact our office at (202) 333-4900 to cancel the reservation as soon as possible.

We look forward to meeting you at the conference.

Sincerely,

A handwritten signature of David M. Talbot is enclosed in an oval. The signature is written in cursive and appears to read "David M. Talbot".

David M. Talbot  
Conference Manager

ATLANTA TECHNOLOGY UTILIZATION CONFERENCE

November 18, 1975

FORMAL INVITATIONS





NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

NASA CAN BE PART OF  
YOUR RESEARCH AND DEVELOPMENT STAFF  
FREE!

You have a one time only opportunity to explore the NASA information banks free. You can search for technical information, product ideas and diversification opportunities to name but a few of the resources available.

NASA wants to stimulate the development of technology within the minority business community. You have been selected as a technically based minority enterprise--the type who can turn NASA information into products, and products into profits.

NASA, in cosponsorship with the Office of Minority Business Enterprise, has scheduled a workshop to be held in Atlanta on November 18, 1975, to introduce you to the information retrieval search which will be performed for you - free. Registration information will be mailed to you shortly. But mark your calendar now, this is an important opportunity for your company.

Sincerely,

A handwritten signature in cursive script, reading "Peter H. Chen".

Peter H. Chen  
Deputy Assistant Administrator  
for Equal Opportunity Programs

A handwritten signature in cursive script, reading "Louis N. Mogavero".

Louis N. Mogavero  
Acting Director,  
Technology Utilization Program

# NASA'S TECHNOLOGY UTILIZATION PROGRAM



## *Publications and Services Available to Industry*

### **NASA Tech Briefs**

The Technology Utilization Office is engaged in an experimental program to identify, evaluate, and publish items of technology that have special significance to nonaerospace industries. At each NASA Field Installation, a Technology Utilization Officer is responsible for assuring that the professional personnel document and report the inventions, innovations, improvements, discoveries, and other forms of new knowledge which have been developed. In addition, Technology Utilization Officers are responsible for administration of the new-technology clause in NASA contracts for research and development, which obligates the contractor to report to NASA all new technology derived from work under the contract.

Approximately 25,000 reportable items have been identified and evaluated to date. Those items which have potential commercial utility have been announced to business and industry in one of several forms. The most familiar announcement medium is the NASA Tech Brief, which describes technical innovations and often explains the underlying concepts and operating principles. A reader can obtain additional technical



data for a Tech Brief in which he is interested by requesting a Technical Support Package from the Technology Utilization Officer at the originating NASA Center or from the National Technical Information Service. The availability of the support material is designated in the notes at the end of each Tech Brief.

Approximately 6,000 Tech Briefs have been published to date and have found significant acceptance by both non-aerospace and aerospace industries. Tech Briefs are published in nine categories. Annual subscriptions, cumulative indexes, and sets of back copies of Tech Briefs may be purchased from.

National Technical Information Service  
Springfield, Virginia 22161  
Attn: Code 152.61

### **Technology Utilization Program Special Publications**

These documents comprise by far the most varied series of titles. They are defined broadly as other significant scientific and technical information derived from, or of value to, NASA activities. This series includes conference proceedings, monographs, data compilations, state-of-the-art summaries, literature surveys, reports, handbooks, and bibliographies.

Among those particularly useful to industrial organizations are the following:

*Technology Utilization Reports* describe innovations of special significance or complexity. These multi-page documents present information in considerably more detail than Tech Brief announcements. They bear such titles as "Joining Ceramics and Graphite to Other Materials," "Induction Heating Advances; Applications to 5800°F," and "Potting Electronic Modules."

*Technology Surveys* are "Guidebooks" to the latest research sponsored by NASA in specific fields. Written by noted authorities, they report advances in the state of the art and indicate sources of additional technical information. Surveys cover such divergent topics as "Air-Pollution-Monitoring Instrumentation," "Applications of Systems Analysis Models," and "Magnetic Tape Recording."

*TU Compilations* collect many innovations in related areas of technology under a single cover. These are collections of brief descriptions of innovations, all in a related field. They are generously illustrated. Each

compilation provides a workbook on a particular field at the practical level. Examples include "Machine Shop Measurement," "Bonding and Joining Technology," and "Selected Electronic Circuits"

Additional information concerning any of the publications described above may be obtained from

Technology Utilization Office  
Code KT  
National Aeronautics and  
Space Administration  
Washington, D C 20546

### Industrial Applications Centers

Another avenue by which the public, particularly industrial firms not engaged in aerospace activities, may gain access to NASA's rapidly increasing storehouse of scientific and technological information is by subscribing to the services of an Industrial Applications Center

Technically qualified professional personnel at each center translate industrial problems into aerospace vocabulary for computer searches of the data resulting from NASA-sponsored research and development

Further information regarding services provided by these centers is available from the Technology Utilization Office, NASA Headquarters.

### Computer Software Management and Information Center

COSMIC (Computer Software Management and Information Center) was established early in 1966 at the University of Georgia to collect and disseminate to the public computer software developed by government agencies. Since that time thousands of computer programs in all areas of aerospace engineering, mathematics, business, and industry have been distributed to requesters throughout the United States

The Technology Utilization Office of NASA, designed to enlarge the return on the public investment in aeronautical and space activities, was the first government agency to participate formally. In July 1968 the Atomic Energy Commission and in November 1968 the Department of Defense joined in the COSMIC endeavor. With the addition of these two major agencies, the original concept of making tax-paid developments available to the public was expanded to make COSMIC a transfer point between and within government agencies as well

Programs available from COSMIC are listed in *Computer Program Abstracts*, a quarterly indexed abstract journal available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D C. 20402. Single copies of the journal are 65 cents. Annual subscriptions are \$2.60. A cumulative issue covering the period July 15, 1969, through July 15, 1971, may be purchased for \$2.

### Application Teams

NASA's Application Team Program is an effort to find solutions to technological problems in areas of public concern not directly related to aeronautics and space research. These areas include medicine, pollution control, urban construction and planning, transportation, mine safety, and fire safety. Multi-disciplinary Application Teams have been established under contract to the Technology Utilization Office for this purpose.

The Teams work with selected educational and research institutions to adapt and apply technology derived from the aerospace program to specific problems that have been carefully defined in cooperation with other government agencies and public interest groups on the federal, state, and local levels. Further information about the activities of the NASA Application Teams may be obtained by writing to the Technology Utilization Office, NASA Headquarters.

### Patents and Licenses

To encourage the earliest possible commercial use of innovations resulting from NASA-sponsored research and development, all inventions patented by NASA are available for licensing by American firms.

Details on the NASA patent policy are contained in the *NASA Patent Abstracts Bibliography*, a semiannual publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. Each issue of the bibliography has a separately bound abstract section (Section 1) and index section (Section 2). Each abstract section covers the six-month period since the preceding issue; each index section is fully cumulative, covering all NASA-owned inventions announced since May 1969. The bibliography is available from the National Technical Information Service, Springfield, Virginia 22161. Ask for the most recent issues of NASA SP-7039. The price of the bibliography varies depending on the size of the individual issue.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

October 28, 1975

You have been invited to attend NASA's Technology Utilization Conference to be held on November 18, 1975 at the Atlanta International Hotel. Enclosed you will find a detailed information packet including agenda, logistical information, and registration information.

Your attendance at this conference offers you the chance to discuss your technical interests, product ideas, and diversification possibilities with a NASA Technician who will assist you in initiating a computer search specifically tailored to your company. At any other time, this search would cost you from \$150 to \$1000, but participants at this conference will receive a search at no cost.

Please indicate whether you will or will not attend by checking your preference at the bottom of this page. Then return this sheet in the enclosed self-addressed envelope so we can reserve your place.

Sincerely,

A handwritten signature in cursive script, reading "David M. Talbot", is enclosed in an oval.

David M. Talbot  
Conference Manager

\_\_\_\_ Please reserve me a place at the conference.

\_\_\_\_ I will not be able to attend.

## WHAT'S SO IMPORTANT ABOUT TECHNOLOGY?

EVERYTHING. We live in an environment of technology and change. The market you are selling today may not exist tomorrow because of the development of a new product, process or technique that has made yours obsolete.

NEED INFORMATION? We have information about developments in:

- |                         |                      |
|-------------------------|----------------------|
| * MACHINING             | * METAL FABRICATION  |
| * MECHANICAL SYSTEMS    | * ELECTRONICS        |
| * GENERAL MANUFACTURING | * DATA SYSTEMS       |
| * PLASTICS              | * ENGINEERING DESIGN |
| * CHEMICALS             | * MANAGEMENT SYSTEMS |

These are just a few of the areas for which technological information is stored. You are invited to send a representative to a technology utilization conference to be held at:

THE ATLANTA INTERNATIONALE HOTEL

450 CAPITOL AVENUE  
TUESDAY, NOVEMBER 18, 1975

FOR MORE INFORMATION

CONTACT MR. CARLTON ECCLES  
ATLANTA OFFICE OF MINORITY BUSINESS ENTERPRISE  
404-526-4326

Come to the conference and you will be provided the opportunity to explore the vast federal store of technical and managerial information.

Co-Sponsored by: National Aeronautics and Space Administration  
and the Department of Commerce, Office of  
Minority Business Enterprise.

# LOGISTICAL INFORMATION

FOR MORE INFORMATION CALL: Mr. Carlton Eccles 404-526-2346  
Ms. Mary Wrasman 202-333-4900

## WHERE AND WHEN

SITE: Atlanta Internationale Hotel  
450 Capitol Avenue, Atlanta

DATE: November 18, 1975, Tuesday

TIME: 10:15 AM

Registration will begin at 10:15 AM  
in the lobby of the Mediterranean  
Room on the main floor.

## DIRECTIONS

FROM ATLANTA INTERNATIONAL AIRPORT: Take  
Capitol Avenue out of the airport. The  
Hotel is approximately a 15 minute ride  
from the airport and is located on Capitol  
Avenue.

FROM DOWNTOWN ATLANTA: The Hotel is  
located in downtown Atlanta on both  
routes I 75 and I 20.

## FOOD AND LODGING

LUNCHEON: There will be a registration  
fee of approximately \$5.00 for the lunch.

HOTELS: If you are coming in from out  
of town, two convenient hotels are:

The Atlanta Internationale Hotel: \$23.00-  
404-688-1900 Single

The Atlanta Townehouse Hotel: \$19.00-  
404-892-6800 Single

## TRANSPORTATION

FROM AIRPORT: Take the airport bus  
which stops at the Atlanta Internationale  
Hotel. It runs at 15 minute intervals  
and costs \$2.00.

AGENDA DRAFT  
ATLANTA TECHNOLOGY UTILIZATION CONFERENCE  
ATLANTA INTERNATIONALE HOTEL

November 18, 1975

THEME: 'Minority Business Development through Technology Transfer'

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:15 - 10:40	<u>REGISTRATION</u>	Mediterranean Room Lobby
10:40 - 10:45	<u>WELCOMING ADDRESS</u> Speaker: Mr. Charles F. McMillan OMBE Regional Office 1371 Peachtree Street, Suite 505 Atlanta, Georgia 30309	Mediterranean Room
10:45 - 11:00	<u>PROGRAM INTRODUCTION</u> Conferee Orientation. Seminar Objectives. Speaker: Mr. Ray L. Gilbert Manager, State and Local Technology NASA Technology Utilization Office Washington, D.C. 20546	Mediterranean Room
11:00 - 11:30	<u>COMMERCIAL APPLICATION OF SPACE TECHNOLOGY</u> Display and Discussion of items developed by NASA which have commercial applications. Speakers: Mr. Harrison Allen, Jr. Technology Utilization Engineer Lewis Research Center Cleveland, Ohio 44135  Mr. Chuck Kubokawa Chief, Technology Utilization Office Ames Research Center Moffett Field, California 94035	Mediterranean Room
11:30 - 11:45	<u>NASA PATENTS AND LICENSING</u> Procedures for acquiring NASA patents and licenses. Question and Answer Period. Speaker: To Be Announced.	Mediterranean Room
11:45 - 1:00	<u>LUNCHEON PROGRAM</u> Speaker: Mr. Joe Hudson, Local Vice-President/ Executive Director Interracial Council for Business Opportunity 40 Marietta Street, N.W. (Suite 1201) Atlanta, Georgia 30303	Mediterranean Room

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
1:00 - 1:30	<p><u>THE INDUSTRIAL APPLICATIONS CENTER SYSTEM</u>  Discussion of the IAC system presenting a general approach to using information services. Detailed explanation of the search process and the type of documents which result from a search.  Question and Answer Period.  Speaker: Mr. Peter J. Chenery, Director  North Carolina Science &amp; Technology Research Center  P.O. Box 12235  Research Triangle Park, North Carolina 27709</p>	Mediterranean Room
1:30 - 2:45	<p><u>TECHNOLOGY UTILIZATION WORKSHOPS</u>  Workshop leaders will engage in an active interchange with participants concerning their areas of interest. Based upon participant's questions, an on-line terminal will be used to illustrate the method and results which can be expected from a search request.  Workshop Moderators: Staff  North Carolina Science &amp; Technology Research Center  P.O. Box 12235  Research Triangle Park, North Carolina 27709</p>	Conference Rooms
2:45 - 3:00	<p><u>GENERAL OVERVIEW AND SUMMARY</u>  Program Wrap Up. Distribution of Evaluation Questionnaires.  Moderator: Mr. Ray L. Gilbert</p>	Mediterranean Room





NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
WASHINGTON, D C 20546



REPLY TO  
ATTN OF

October 14 , 1975

In accordance with your response to our invitation, a reservation has been confirmed for your firm at the NASA Technology-Utilization Conference to be held Tuesday, October 21, 1975 at the Illinois Institute of Technology in Chicago.

The seminar has been structured to reflect the specific interests of the firms in attendance. During the workshops, you will have the opportunity to discuss your individual business interests with NASA technicians.

Registration will begin at 10:00 A.M. and the formal proceedings of the conference will continue until 3:30 P.M.

If circumstances prevent your firm from attending the seminar, please contact our office at (202) 333-4900 to cancel the reservation as soon as possible.

We look forward to meeting you at the conference.

Sincerely,

A handwritten signature in dark ink, appearing to read "David M. Taibot", enclosed within an oval-shaped stamp.

David M. Taibot  
Conference Manager

APPENDIX VIII

MATERIALS DISTRIBUTED AT CONFERENCES

## APPENDIX VIII

### MATERIALS DISTRIBUTED AT CONFERENCE

HAND-OUT PACKET
-----------------

TECHNOLOGY UTILIZATION PROGRAM REPORT . . . .	National Aeronautics and Space Administration, Technology Utilization Office
COSMIC . . . . .	Computer Software Management and Information Center, The University of Georgia
OPPORTUNITY - A GUIDE TO OMBE . . . . .	Office of Minority Business Enter- prise, U.S. Department of Commerce
NASA PATENT ABSTRACT BIBLIOGRAPHY . . . . .	flyer, NASA Scientific and Technical Information Facility
REGISTRATION FOR NASA TECHNOLOGY AND TECHNOLOGY UTILIZATION COMPILATIONS . .	NASA Scientific and Technical Infor- mation Facility
QUESTIONS RELATING TO TECHNICAL SEARCH SERVICE . . . . .	NASA Technology Utilization Office
AGENDA . . . . .	InterAmerica Research Associates
EVALUATION QUESTIONNAIRE . . . . .	InterAmerica Research Associates
LIST OF KEY AGENCY CONTACT PERSONNEL . . . .	InterAmerica Research Associates

#### ADDITIONAL HAND-OUT MATERIALS

NASA'S TECHNOLOGY UTILIZATION PROGRAM . . . .	flyer, NASA Scientific and Technical Information Facility
LIST OF SPECIAL PUBLICATIONS PUBLISHED BY THE NASA TECHNOLOGY UTILIZATION OFFICE. .	flyer, NASA Scientific and Technical Information Facility

## COMPILATIONS

NASA Scientific and Technical Information Facility

- NASA SP-5936 (02) Cables and Connectors
- NASA SP-5922 (02) Material Cutting, Shaping and Forming
- NASA SP-5978 (02) Fabrication Technology
- NASA SP-5956 (01) Automatic Controls and Regulators

-Machine Tools and Fixtures

OMBE FUNDED ORGANIZATIONS . . . . . Department of Commerce  
Office of Minority Business Enterprise

MESBIC DIRECTORY . . . . . Department of Commerce  
Office of Minority Business Enterprise

PROGRESS OF THE MINORITY BUSINESS

ENTERPRISE PROGRAM . . . . . Department of Commerce  
Office of Minority Business Enterprise

\*In addition to the aforementioned materials which were distributed at every conference, over 150 different types of Tech Briefs pertinent to the participating industry groupings were distributed at each conference. Areas covered included: Chemicals, Plastics, Electronics, Communications, Mechanical Design, Pollution, Materials, Energy, Machining, and Metal Working.

### TECHNOLOGY UTILIZATION WORKSHOPS

Four workshops, Electronics/Communications, Mechanical Design, Chemical/Plastics, and Pollution were held concurrently. Participants were invited to attend the workshop of their choice for the first hour and a half, then were given the option of moving to another for the last half hour. The introductory portion of the workshop - an explanation of WESRAC services and a sample search - was presented by Mr. Herb Asbury, and broadcast simultaneously through the four workshops through the facilities of the Instructional Television Center.

#### Introduction - Mr. Herb Asbury

Mr. Asbury initiated the workshop session by giving a brief overview of WESRAC services. The basic purpose of the WESRAC search service is to produce information through the use of computer data banks which have access to over 72 information sources, including NASA. The WESRAC staff has access to information which indicates, for a chosen topic, where to look and how much information is available. The technician will discuss the client's need, establish the sources of data, and make a cost estimate. At this point, WESRAC identifies key words and concepts, groups these key words into a strategy and translates this into the language of the computer. Mr. Asbury concluded his presentation by demonstrating a sample search on the individualized television screens, then turned the workshops over to the technical personnel for each topic.

# AGENDA

## TECHNOLOGY UTILIZATION CONFERENCE

JOHNSON SPACE CENTER - HOUSTON, TEXAS

Theme: "LOOK TO US"

February 27, 1975

<u>TIME</u>	<u>ACTIVITY</u>	<u>LOCATION</u>
8:30 - 8:50	Registration	Gilruth Center
8:50 - 9:00	Introduction - Conference Moderator, Technology Utilization Officer - Lewis Research Center, Cleveland, Ohio. Mr. Harrison Allen, Jr.	
9:00 - 9:05	Welcoming of Participants to the Johnson Space Center, Director - Dr. Christopher C. Kraft, Jr.	Room # 104
9:05 - 9:10	Welcoming of Participants to the Conference. OMBE Deputy Director - Washington, D.C. U.S. Department of Commerce Mr. Sam Cornelius	Room # 104
9:10 - 9:20	Technology Transfer and the Minority Business. Chief, Special Projects Technology Utilization, NASA Headquarters - Washington, D.C. Mr. Ray L. Gilbert	Room # 104
9:20 - 10:00	Presentation of the Industrial Applications Center (IAC) system. The scope of information available, the operating procedures, the process involved in information retrieval and the cost to users. Director, Technical Application Center - University of New Mexico - Albuquerque Mr. Bill Schinnick	Room # 104
10:00 - 12:00	Workshops - Structured around computer searches performed prior to the conference. Participants are broken up into groups by industry, and/or area of interest. Workshops to be chaired by IAC technicians.	Room # 204 209 214 (Details at Conference)
12:00 - 1:30	Lunch Speaker: Vice-President, Regional & Community Affairs, University of New Mexico. Mr. Alex Mercure	

1:30 - 1:45	NASA - Patents and Licensing Patent Council, Johnson Space Center Mr. Marvin Matthews	Room # 104
1:45 - 2:30	"We Can't Eat Moon Rock" Discussion of the problems minority owned businesses face in the world of technology. Technology Utilization Officer, Ames Research Center - California Mr. Charles Kubakawa	Room # 104
2:30 - 3:00	Space Ventures MESBIC - Explanation of the MESBIC role in the marriage of minority business to technology. Space Ventures - President Mr. Dan Sword.	Main Hall Room # 104
3:00 - 3:15	Break	
3:15 - 3:45	"New Technology from the Space Shuttle Program." Rockwell International Manager - Small & Minority Business Administration Mr. Sy Gottlieb	Room # 104
3:45 - 4:30	"How to do Business with Rockwell." Rockwell International Procurement presentation for subcontractors. Rockwell International Manager - Small & Minority Business Administration Mr. Sy Gottlieb	Room # 104
4:30 - 4:45	Service Available to the Minority Business Owner Through the Office of Minority Business Enterprise. OMBE Regional Director Mr. Henry Zuniga	Room # 104
4:45 - 5:00	Conference Conclusion Closing Remarks	Room # 104
5:30 - 7:00	Hospitality Hour	Ramada Inn

# AGENDA

## TECHNOLOGY UTILIZATION CONFERENCE

University of Southern California  
ITV Center Auditorium, Olin Hall of Engineering  
Saturday, May 3, 1975

<u>TIME</u>	<u>ACTIVITY</u>	<u>LOCATION</u>
8:30 - 9:00	Registration  Conference Moderator - Mr. Harrison Allen, Jr., Technology Utilization Officer, Lewis Research Center, Cleveland, Ohio	Reception Area
9:00 - 9:05	Welcoming of Participants to USC Speaker: Mr. Jack Nilles, Director of Inter- Disciplinary Program Development, USC	Auditorium
9:05 - 9:10	Welcoming of Participants to Conference Speaker: Mr. Ray Romero Regional Director of Office of Minority Business Enterprises, Western Region	
9:10 - 9:25	Program Introduction Presentation setting the tone and mood of conference, display of examples of successful commercial applications of NASA Technology. Speaker: Mr. Harrison Allen Conference Moderator	
9:25 - 9:40	Conference Purpose and Objective Outline of the program, statement of specific purpose and intent of the program, and introduction of the resource people present. Speaker: Mr. Ray Gilbert Chief Special Projects NASA Technology Utilization Office Washington, D.C.	
9:40 - 9:55	The Industrial Application Center System Presentation of what an Industrial Application Center is, what services are available, scope of information available, information retrieval process and cost to users. Speaker: Mr. Radford King Director, Industrial Applications Center Los Angeles, California	



<u>TIME</u>	<u>ACTIVITY</u>	<u>LOCATION</u>
10:00 - 11:30	<p>Technology Utilization Workshops</p> <ol style="list-style-type: none"> <li>1. Chemical/Plastics</li> <li>2. Electronics/Communications</li> <li>3. Mechanical Design</li> <li>4. Pollution</li> </ol> <p>Each workshop leader will present in detail the IAC services and the mechanics of the retrieval process. An actual search will be run on the video system for all to monitor. Technical literature will be given out and each participant will be assisted with questions relating to individual search requests.</p> <p>Workshop format: Open Dialogue Staff; I.A.C.Managers/T. U. Officers</p>	<p>Studios A,B,C,D (Details at Conference)</p>
11:30 - 12:00	<p>Workshop Crossover</p> <p>Workshop Participants may change workshops or continue with their original selection.</p>	<p>Studios A,B,C,D (Details at Conference)</p>
12:30 - 2:00	<p>Luncheon</p> <p>Speaker: Mr. Hosea M. Alexander Task Manager, Technical Applications to Health Resources Planning, Jet Propulsion Laboratories, Pasadena, California</p> <p>Subject: NASA Technology and the Martin Luther King, Jr. Hospital</p>	<p>Town 'n Gown</p>
2:00 - 3:30	<p>Commercializing Technology Workshops</p> <p>Concurrent workshops combining public and private sector technical resource people with procurement and marketing personnel. Highlights, how to do business with major institutions, markets for technically derived products and market development techniques.</p> <p>Format: Open dialogue</p> <p>Workshop Resource People: NASA - Deven E. Biggs; JPL - Walter H. Anderson; Rockwell - Sy Gottlieb, Bud Goldstone; Sears - Neil Piket, Robert Shibley; IBM - Arthur Glockner, Hal Calkins.</p>	<p>Studios A,B,C,D (Details at Conference)</p>
3:30 - 4:30	<p>Technical Panel - Question and Answer Period</p> <p>Panel composed of resource people who participated in the program. The panel is open to questions from the floor.</p> <p>Moderator: Mr. Ray Gilbert</p>	<p>Auditorium</p>
4:30 - 5:00	<p>Conference Evaluation and Conclusion</p> <p>After evaluation, open interaction between audience and resource people.</p> <p>Coordinator - Mr. Ray Gilbert</p>	<p>Auditorium</p>

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:30 - 1:30	TECHNOLOGY UTILIZATION WORKSHOPS There will be three hour-long workshop sessions. Participants have the option of attending any three workshops of their choice. Topics will be: ELECTRONICS MECHANICAL DESIGN MATERIALS POLLUTION ENERGY	See Chart

10:30	11:30	12:30	LOCATION
Electronics	Electronics	Electronics	Exeter Room
Mechanical Design	Mechanical Design	Mechanical Design	Dalton Room A
Materials	Pollution	Energy	Dalton Room B

Each workshop leader will present in detail the Industrial Application Center Services and the mechanics of the retrieval process. Technical literature will be given out and each participant will be assisted in structuring his individual search request.

RESOURCE PERSONNEL WILL BE AVAILABLE  
THROUGHOUT THE AFTERNOON FOR  
INDIVIDUAL CONSULTATION.

AGENDA

SAN FRANCISCO TECHNOLOGY UTILIZATION CONFERENCE  
THE TOWNEHOUSE HOTEL  
SEPTEMBER 11, 1975

THEME: "Minority Business Development through Technology Transfer"

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:30 - 10:55	REGISTRATION	Golden Gate Room
10:55 - 11:00	WELCOMING ADDRESS Speaker: Mr. Powell McDaniel OMBE Regional Office 450 Golden Gate Avenue San Francisco, CA 94102	Golden Gate Room
11:00 - 11:15	PROGRAM INTRODUCTION Conferee Orientation. Seminar Objectives. Speaker: Mr. Ray L. Gilbert Manager, State and Local Technology NASA Technology Utilization Office Washington, D.C. 20546	Golden Gate Room
11:15 - 11:25	COMMERCIAL APPLICATION OF SPACE TECHNOLOGY Display and Discussion of items developed by NASA which have commercial applications. Ames Research Center - Speaker: Mr. Chuck Kubokawa Chief Technology Utilization Office Ames Research Center Moffett Field, CA 94035	Golden Gate Room
11:25 - 11:35	Lewis Research Center - Speaker: Mr. Harrison Allen, Jr. Technology Utilization Engineer Lewis Research Center Cleveland, Ohio 44135	
11:35 - 11:45	NASA PATENTS AND LICENSING Procedures for acquiring patents and licenses from NASA. Question and answer period. Speaker: Mr. Darrell G. Brekke Patent Counsel Ames Research Center Moffett Field, CA 94035	Golden Gate Room

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
11:45 - 1:00	LUNCHEON PROGRAM "Asian American Involvement in Minority Business" Speaker: Mr. David Ushio National Director Japanese American Citizens League	Alameda Room
1:00 - 1:30	THE INDUSTRIAL APPLICATIONS CENTER SYSTEM Discussion of the IAC System presenting a general approach to using information services. The presentation will center on a discussion and detailed explanation of the automated and manual search processes and the type of documents which result from a search. Question and Answer Period. Speaker: Mr. Radford King Director, Western Research Application Center (WESRAC) University of Southern California 950 W. Jefferson, Room 102 Los Angeles, CA 90007	Golden Gate Room
1:30 - 2:45	THREE CONCURRENT TECHNOLOGY UTILIZATION WORKSHOPS Three workshops will be held concurrently illustrating the workings of the Industrial Applications Center System. Workshop leaders will engage in an active interchange with participants concerning their areas of interest. Based upon participant's questions, an on-line terminal will be used to illustrate the method and results which can be expected from a search request. Workshop Leaders: Staff Western Research Application Center (WESRAC) University of Southern California Los Angeles, CA 90007	To Be Announced
2:45 - 3:15	GENERAL OVERVIEW AND SUMMARY Program Wrap-Up. Distribution of Search Request Forms and Evaluation Questionnaires. Moderator: Mr. Ray L. Gilbert	Golden Gate Room

## AGENDA

### CHICAGO TECHNOLOGY UTILIZATION CONFERENCE ILLINOIS INSTITUTE OF TECHNOLOGY

OCTOBER 21, 1975

THEME: 'Minority Business Development through Technology Transfer'

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:00 - 10:30	<u>REGISTRATION</u>	Main Lobby
10:30 - 10:35	<u>WELCOMING ADDRESS</u> Speaker: Mr. Jack Smith, Director OMBE Regional Office 55 E. Monroe, Suite 1438 Chicago, Illinois	Auditorium (Main Floor)
10:35 - 11:00	<u>PROGRAM INTRODUCTION</u> Conferee Orientation. Seminar Objectives. Speaker: Mr. Ray L. Gilbert Manager, State and Local Technology NASA Technology Utilization Office Washington, D.C. 20546	Auditorium
11:00 - 11:30	<u>COMMERCIAL APPLICATION OF SPACE TECHNOLOGY</u> Display and discussion of items developed by NASA which have commercial applications. Speakers: Mr. Harrison Allen, Jr. Technology Utilization Engineer Lewis Research Center Cleveland, Ohio 44135  Mr. Chuck Kubokawa Chief, Technology Utilization Office Ames Research Center Moffett Field, California 94035	Auditorium
11:35 - 11:45	<u>NASA PATENTS AND LICENSING</u> Procedures for acquiring NASA patents and licenses. Question and Answer Period. Speaker: Mr. Gene E. Shook, Sr. Patent Advisor, Office of Patent Counsel Lewis Research Center Cleveland, Ohio 44135	Auditorium
11:45 - 1:15	<u>LUNCHEON PROGRAM</u> Speaker: Mr. Thomas P. Lewis, President Southside Bank 4659 South Cottage Grove Chicago, Illinois 60653	West Dining Room

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
1:15 - 1:45	<u>THE INDUSTRIAL APPLICATIONS CENTER SYSTEM</u> Discussion and detailed explanation of the information and services available through the Aerospace Research Applications Center (ARAC). Examples of specific cases and practical applications of the center's services. Speakers: Dr. Robert D. Shriner, Director Aerospace Research Applications Center (ARAC) Indiana University 400 E. 7th Street Bloomington, Indiana 47401  Mr. Thor Semlar Director of Technical Services, ARAC	Auditorium
1:45 - 3:15	<u>TECHNOLOGY UTILIZATION WORKSHOPS</u> Personal consultation with ARAC technical personnel regarding specific business interests and problems. Workshops will be divided into topic areas; ARAC personnel experienced in a variety of areas will be available for questions and consultation.  <u>WORKSHOP I - CHEMICAL/PLASTICS</u> Consultants: Dr. Shirley Cordes Senior Scientist, ARAC  Dr. Joseph DiSalvo ARAC Director of Industrial Services  <u>WORKSHOP II - METAL WORKING/MACHINING/MECHANICAL SYSTEMS</u> Consultants: Mr. Frank Watt Mechanical Engineer, ARAC  Dr. Robert Shriner Director, ARAC  <u>WORKSHOP III - ELECTRONICS AND ELECTRICAL SYSTEMS</u> Consultants: Mr. Fred Gaspar Electrical Engineer, ARAC  Mr. Thor Semlar Director of Technical Services, ARAC	Conference Rooms
3:15 - 3:30	<u>GENERAL OVERVIEW AND SUMMARY</u> Program Wrap Up. Distribution of Evaluation Questionnaires. Moderator: Mr. Ray L. Gilbert	

AGENDA

ATLANTA TECHNOLOGY UTILIZATION CONFERENCE

ATLANTA INTERNATIONALE HOTEL

November 18, 1975

THEME: "Minority Business Development through Technology Transfer"

CO-SPONSORED BY: National Aeronautics and Space Administration  
Department of Commerce, Office of Minority Business Enterprise

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
10:15 - 10:40	<u>REGISTRATION</u>	Malta Room
10:40 - 10:45	<u>WELCOMING ADDRESS</u> Speaker: Mr. Charles F. McMillan, Director OMBE Regional Office 1371 Peachtree Street, Suite 505 Atlanta, Georgia 30309	Malta Room
10:45 - 11:00	<u>PROGRAM INTRODUCTION</u> <u>Conferee Orientation</u> . Seminar Objectives Speaker: Mr. Ray L. Gilbert, Manager State and Local Technology NASA Technology Utilization Office Washington, D.C. 20545	Malta Room
11:00 - 11:30	<u>COMMERCIAL APPLICATION OF SPACE TECHNOLOGY</u> Display and Discussion of items developed by NASA which have commercial applications. Speakers: Mr. Chuck Kubokawa, Chief Technology Utilization Office Ames Research Center Moffett Field, California 94035  Mr. Harrison Allen, Jr. Technology Utilization Engineer Lewis Research Center Cleveland, Ohio 44135	Malta Room
11:30 - 11:45	<u>NASA PATENTS AND LICENSING</u> Procedures for acquiring NASA patents and licenses. Question and Answer Period. Speaker: Mr. Leon Wofford, Chief Patent Counsel Marshall Space Flight Center Office of Chief Counsel Mail Code CC01, Building 4200 Marshall Space Flight Center, Alabama 35812	Malta Room

<u>TIME</u>	<u>EVENT</u>	<u>LOCATION</u>
11:45 - 1:00	<p><u>LUNCHEON PROGRAM</u>  Speaker: Mr. Joe Hudson,  Local Vice-President/Executive Director  Interracial Council for Business  Opportunity  40 Marietta Street, N.W. Suite 1201  Atlanta, Georgia 30303</p>	Capri Room
1:00 - 1:30	<p><u>THE INDUSTRIAL APPLICATIONS CENTER SYSTEM</u>  Discussion of the IAC system presenting a  general approach to using information services.  Detailed explanation of the search process  and the type of documents which result from a  search.  Question and Answer Period.  Speaker: Mr. Peter J. Chenery, Director  North Carolina Science &amp; Technology  Research Center  P.O. Box 12235  Research Triangle Park, North Carolina  27709</p>	Malta Room
1:30 - 2:45	<p><u>TECHNOLOGY UTILIZATION WORKSHOP</u>  Workshop leaders will engage in an active  interchange with participants concerning  their areas of interest. Based upon  participant's questions, an on-line  terminal will be used to illustrate the  method and results which can be expected  from a search request.  Workshop Moderators: Staff  North Carolina Science &amp;  Technology Research Center  P.O. Box 12235  Research Triangle Park,  North Carolina 27709</p>	Flames Room
2:45 - 3:00	<p><u>GENERAL OVERVIEW AND SUMMARY</u>  Program Wrap Up  Distribution of Evaluation Questionnaires.  Moderator: Mr. Ray L. Gilbert.</p>	Flames Room



## APPENDIX X

### MAILINGS LISTS AND ORGANIZATIONS SCREENED FOR RECRUITMENT

## MAILING LISTS AND ORGANIZATIONS SCREENED FOR RECRUITMENT

The following are the organizations and listings which provided input regarding technically oriented minority entrepreneurs. NASA and OMBE national and local organizations were utilized to direct the contractor to the applicable local organizations, although the contractor did additional research and recruiting to compile the mailing lists. Many organizations besides the following were contacted, but because of time limitations or lack of information, provided neither input nor assistance.

### NATIONWIDE

National Aeronautics and Space Administration, Distribution Control and Analysis File

National Directory of Minority Manufacturers, Office of Minority Business Enterprise

DOC, Maritime Administration, Office of Civil Rights

Firms in the 8(a) Business Development Program, U.S. Small Business Administration Reports Management Division

Latin American Manufacturers Association (LAMA)

National Association of Black Manufacturers Membership Directory

Minority Business Enterprises Directory, McDonnell Douglas Corporation

MESBICS in each locale were contacted to provide suggestions on firms in their areas.

C-4

## HOUSTON AREA

Directory of Minority Owned Businesses, Texas Industrial Commission,  
Office of Minority Business Enterprise

U.S. Department of Commerce, Dallas Regional OMBE Office Listing

Austin Minority Business Directory, Austin Minority Economic Development  
Corporation

Black Business Directory, San Antonio Business Resource Center

Minority Vendors Directory for the Greater Houston Area, Houston  
Regional Minority Purchasing Council

Science, Engineering, Research and Development Directory, Small Business  
Administration, Region VI, Dallas, Texas

Air Conditioning Council of Greater Houston Membership List

Gulf South Minority Purchasing Council, New Orleans, Louisiana

National Tool, Die and Precision Machining Association Membership  
Listing, Houston Chapter

Pan American University, Edinburg, Texas

San Antonio Area Minority Contractor's Listing

## LOS ANGELES AREA

The OMBE Regional Office had a comprehensive listing of minority technical  
firms on the West Coast. To cross-check this listing, InterAmerica  
also made contact with the local National Association of Black  
Manufacturers and the Latin American Manufacturers Association.

## BOSTON AREA

KGA's 500, New England Office of Minority Business Enterprise

Minority Business Enterprises in Connecticut, Connecticut Department  
of Commerce

Black Corporation Presidents of New England Membership Listing

BOSTON AREA continued

Boston Business Resource Center

Business Resource Directory, Federal Reserve Bank of Boston

Business Ventures, Inc., MESBIC, New Haven, Connecticut

Lewis H. Latimer Foundation, Cambridge, Massachusetts

Massachusetts Venture Capital Corporation, MESBIC, Boston, Massachusetts

Puerto Rican Businessmens Association, Hartford, Connecticut

Stamford Equal Economic Opportunity Council, Stamford, Connecticut

SAN FRANCISCO AREA

San Francisco Office of Minority Business Enterprise Listing (complete)

Asian American Manufacturing and Wholesale Suppliers Listing

Futures Planning Council

Japanese American Citizens League

Minority Industrial Suppliers, Lawrence Livermore Laboratory, University  
of California

University of California at Berkeley, Office of the Chancellor

CHICAGO AREA

Indiana State Office of Minority Business Enterprise

Michigan State Office of Minority Business Enterprise

Ohio State Office of Minority Business Enterprise

Wisconsin State Office of Minority Business Enterprise

Afro-Urban Institute, Milwaukee, Wisconsin

CHICAGO AREA continued

American Indian Business Association

Bread Basket Commercial Association

Chicago Economic Development Corporation

Illinois Institute of Technology Research Institute, Techno/Economic  
Studies Group

Mexican American Chamber of Commerce

Milwaukee Urban League

National Public Relations Business and Marketing Association

Northern Illinois Business Corporation

Greater Chicago Minority Vendors Directory, Chicago Regional Purchasing  
Council, Inc.

National Association of Black Manufacturers, Inc., Chicago Regional  
Office Listing

National Puerto Rican Business and Marketing Association, Inc., Chicago  
Regional Office Listing

ATLANTA AREA

Chattanooga Area Business Resource Center, Office of Minority Business  
Enterprise

Chattanooga Chamber Foundation, Office of Minority Business Enterprise

National Business League - Chattanooga, Tennessee, Office of Minority  
Business Enterprise

Talbotton Business Development Office, Office of Minority Business  
Enterprise

Atlanta Minority Business Directory, Atlanta Chamber of Commerce

Directory of Minority Businesses in the Greater Chattanooga Area

Minority Business Directory - Talbotton, Georgia, The Federation of  
Southern Cooperatives

ATLANTA AREA continued

Onyx Corporation, Atlanta call contractor

Southern Rural Action, Atlanta

South Eastern Economic Development Foundation